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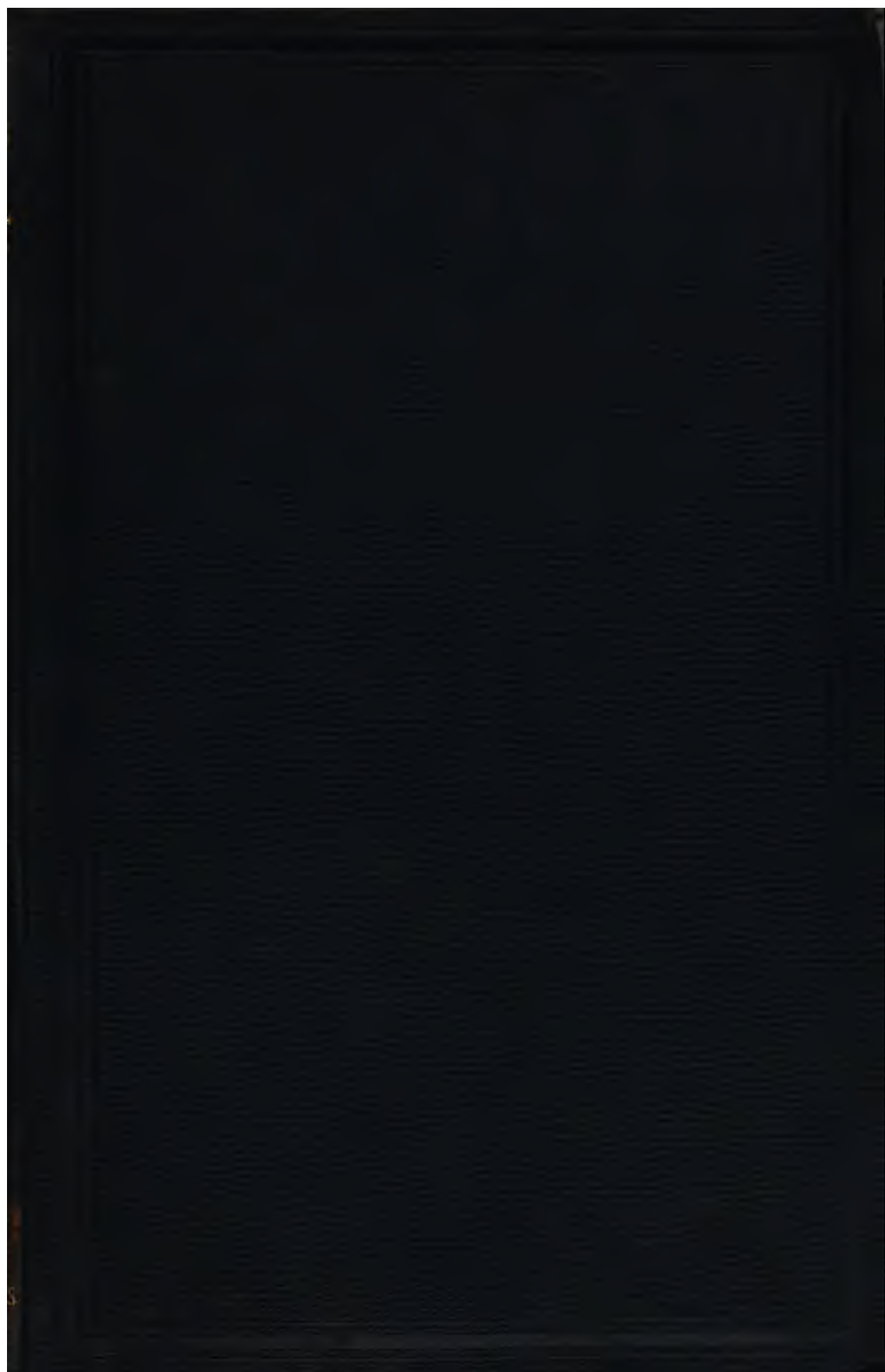
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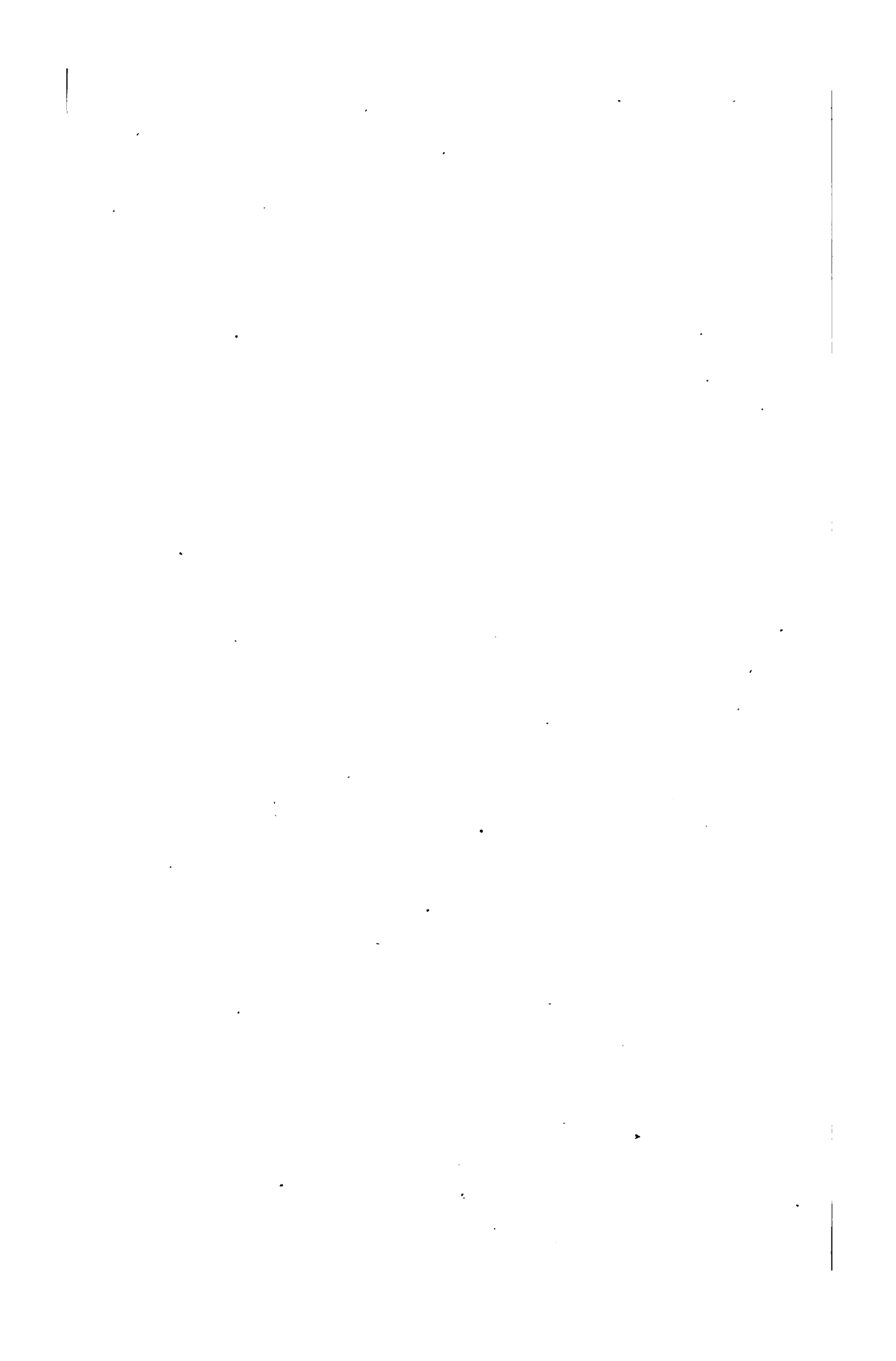
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**OBSERVATIONS
IN CLINICAL SURGERY.**

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OBSERVATIONS
IN
CLINICAL SURGERY

BY
JAMES SYME,
PROFESSOR OF CLINICAL SURGERY IN THE UNIVERSITY OF EDINBURGH.



EDINBURGH:
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PREFACE.

A SURGICAL case is read with interest by practitioners, not merely on account of its individual features, but because it illustrates the effect of treatment, and enables them to determine the value of practical principles for their own guidance. But at no period in the history of surgery has there been so much occasion for information of this kind as at present, since the profusion of vague and verbose compilations, together with the mass of crude speculation and reckless misrepresentation with which the medical press has of late years teemed, have so bewildered the minds of most men as to render them incapable of discriminating between the good and evil of what they read. There hence results a painful feeling of uncertainty, with constant straining after novelty as the wheel of fashion revolves, so that sound doctrines, instead of becoming more firmly established

through time, are apt to be relinquished and replaced by the silly suggestions of presumptuous folly. Having for a long period of years been engaged in teaching Surgery, with the advantage of a great hospital for my field of instruction, I venture to hope that the expression of opinions which I have thus been led to entertain, together with the relation of cases shewing their application in practice, may not prove unacceptable to the members of my profession. The observations now offered refer with few exceptions to cases that have occurred within the last nine months ; and it is my intention, at no distant date, to publish some further illustrations of the principles which I am accustomed to teach.

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CLINICAL OBSERVATIONS.

FRACTURE OF THE THIGH-BONE.

THERE are few principles more firmly established, or, as it seems to me, more entirely erroneous, than that extension is essential for the successful treatment of a fractured thigh-bone. I long believed and taught this as an incontrovertible truth, but for some time past have been satisfied that it is equally unsound in theory, and opposed to good practice. The “long splint” of Desault, which was contrived on purpose to effect extension by stretching the perineum and foot of the injured limb between the extremities of a wooden board, has been found so useful in the treatment of this fracture, that most people will probably regard the opinion just expressed with no less surprise

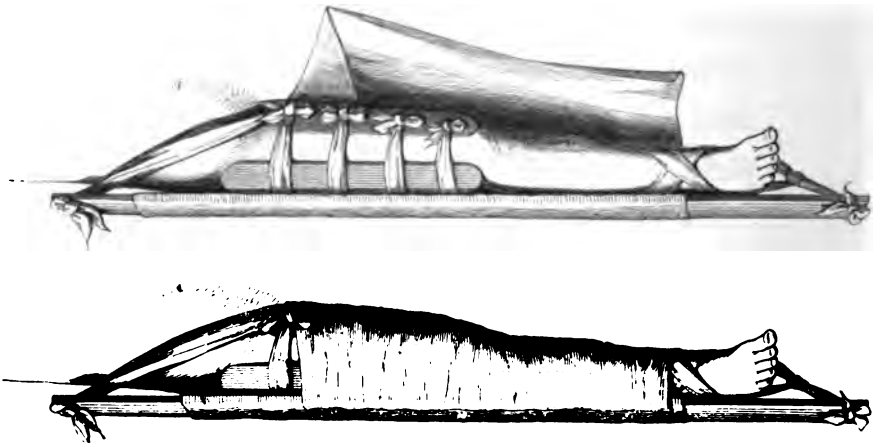
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than disapprobation. But if a case of the kind in question, which ultimately terminates favourably, is carefully watched during the process of recovery, it will be found that the bands employed for effecting extension are never tight, and merely tied with sufficient firmness to keep the apparatus in its place. It is when the fractured bone has been improperly set, and the limb is found to be shorter than its fellow, that the surgeon racks his patient by desperately tugging at the bandages, and all to no purpose, as the muscles are sure to conquer in this contest. Indeed, when it is recollected that the proper stimulus to muscular contraction is tension, the result of such a conflict will not appear so surprising as that any one should so far forget his physiological principles as to engage in it. Instead of exciting the muscles to contract by subjecting them to extension, the great objects in treating a fracture should be to place them at rest, and by protecting them from all sources of irritation to oppose their contractile action. For this purpose the preventing of motion is of most consequence, since

every displacement of the broken surfaces must tend to irritate their muscular coverings, and hence the great value of Mr. Pott's improvement in the construction of splints, by making them long enough to extend beyond the joints at both ends of the broken bone. It is upon the same principle that the splint of Desault proves so useful, since its influence extends over all the articulations of the limb, and by preventing any one of them from moving, keeps the whole in a state of perfect quiet.

In treating a fracture of the thigh-bone, the first step should be to draw out the limb to its proper length, direction, and shape; and if this cannot be done readily on account of the patient's involuntary resistance, it may be accomplished through the aid of chloroform. Two splints of wood, leather, or pasteboard, the full length of the thigh, from the trochanter major on one side, and the perineum on the other, to below the knee on both sides, are then to be applied and secured by four or five looped bandages, and lastly, the long splint wrapped in a sheet or table-cloth, of which

enough is left free for covering the limb, being placed by the patient's side, the loose portion is brought over and fastened to the board, after which, by means of the perineal and ankle bands, together with one round the body, the whole apparatus is rendered secure.



My present house-surgeon has had three cases of fractured thigh under his charge during the last three months, and the gentleman who preceded him had thirteen in the course of twelve months. They have given me the following table of their results :--

“CASES of FRACTURED THIGHS treated in the Surgical Clinical Wards of the Royal Infirmary, from September 1859 to March 1861.

Case.	Name.	Age.	Result.	Time.
1	A. H.	25	Cured	42 days
2	J. B.	18	Cured	90 „
3	A. A.	9	Cured	42 „
4	W. W.	40	Cured	54 „
5	J. O.	22	Cured	73 „
6	J. D.	5	Cured	28 „
7	P. M'N.	45	Cured	52 „
8	R. R.	2	Cured	17 „
9	P. W.	14	Cured	75 „
10	A. N.	5	Cured	35 „
11	P. F.	14	Cured	56 „
12	W. B.	12	Cured	35 „
13	M. C.	7	Cured	42 „
14	G. G.	55	Cured	58 „
15	J. K.	10	Cured	42 „
16	J. D.	17	Cured	35 „

“All of the cases here mentioned were treated without extension. In No. 11 the limbs when compared were found to be precisely of the same length. In No. 2 there was shortening to the extent of one inch, from the complication of an oblique fracture of the leg. In the other cases, the

shortening varied from a half to three quarters of an inch, but in no instance made any possible difference in the gait of the patient.

“JOSEPH BELL, M.D.

“THOMAS ANNANDALE.”

DISEASE OF THE HIP-JOINT.

It seems surprising that with all the nicety of modern nomenclature, there should not have been devised a more distinct appellation for one of the most frequent and serious ailments to which the human body is liable, than disease of the hip-joint. This vagueness of language no doubt proceeds from the uncertainty which still exists as to the nature and origin of the disease in question. Sir B. Brodie supposed that it generally commenced with ulceration of the cartilages ; but such a view is quite inconsistent with either the symptoms, or the resulting condition in the event of recovery. Instead of suffering the excessive pain caused by motion or pressure, which characterises disease of the cartilages, the patient

is usually able to stand and walk on the affected limb for weeks or even months after beginning to shew signs of the complaint ; and if he recovers from it before the occurrence of suppuration, generally retains no trace of its existence, which could not be the case if the surfaces of articulation had been eroded. It may be added that the disease is most apt to commence at a time of life little prone to independent morbid affections of the articular cartilage, while the absence of swelling, and facility of restoration to a sound state, are quite opposed to the idea of synovial degeneration. In these circumstances it appears most probable that the morbid condition is originally an irritation of the osseous texture, which admits of either returning to health, or going on to alteration of structure, with its usual attendant of suppuration, and consequence of ankylosis or caries.

Disease of the hip-joint is extremely frequent in Scotland, as in other countries possessing a similar climate, so that there is ample opportunity of observing its progress both in public and

private practice. Formerly, cases of this kind were regarded with dread, as sources of protracted suffering and subjects of ineffectual treatment, but they are now viewed very differently, since, if properly managed before suppuration has taken place, they may reasonably, or almost with certainty, be expected to afford a favourable result.

This great change has proceeded from the disuse of counter-irritations, and the establishment of perfect rest, as the grand means of remedy. It appears from the books published in London and elsewhere, and also from the cases which not unfrequently come under my observation, that this salutary reformation has not yet become general, and hence probably the reason of so many operations performed on the southern side of the Tweed for removing the head of the thigh-bone, which, even if we had the wish to do so, there would be little opportunity of repeating here.

The enforcement of rest in order to prove effectual must be complete, since the joint more immediately concerned cannot be kept quiet

unless all the articulations and muscles of the limb are prevented from moving or acting; for moving the toes necessarily moves the ankle; moving the ankle moves the knee; and moving the knee moves the hip; while, even if the last-mentioned joint were so constrained by bandages as not to admit of motion, the action of its muscles would cause such compression of the articulating surfaces as might prevent the object in view from being fully attained.

The "long splint" fortunately affords a simple, easy, and effectual means of accomplishing this general quietude, and to it unquestionably is due the good effect of modern practice. It must be long enough to extend from the false ribs to a little beyond the foot, and equal in breadth to the diameter of the limb, being applied as for fracture of the thigh-bone, but without any additional support. In some cases the thigh is so bent upon the body that it cannot be straightened without causing great pain, and using much force, but unless the bone has become dislocated, may always, through the influence of chloroform, be easily

placed in a proper position, and does not shew any tendency to resume its abnormal position after consciousness is regained. The length of time during which the splint is required varies with the circumstances of the case, but in general does not extend beyond from three to six weeks. The patient's friends are frequently apprehensive of the health suffering from confinement, but are soon satisfied on trial that the effect is quite contrary. The only medical treatment required is regulation of the bowels and diet—which should be nourishing, but not stimulating—wine being forbidden, and animal food restricted within narrow limits. Cod liver oil, if it can be taken without repugnance, will be useful; but nothing can be more preposterous than the common practice of administering iodine, and mercury in such cases, or on other occasions when a strumous constitution is suspected.

CASE I.

A. D., aged 6, from Kinross, was admitted on the 17th of February 1860. Since the beginning of the year he had been falling off in flesh and strength. He complained of pain in the left hip and knee. The limb being considerably drawn up, and resisting extension, the long splint was applied through the assistance of chloroform, which allowed the limb to be straightened. On the 12th of April the splint was taken off, the limb being straight, and the pain gone. On the 16th the patient was dismissed cured.

CASE II.

F. C., aged 14, an emaciated unhealthy looking lad, was admitted on the 17th of February 1860, suffering so severely from hip disease that his father had to carry him. On the 22d the long splint was applied as usual. On the 23d of March the pain was gone. On the 28th he was dismissed cured.

CASE III.

F. G., aged 23, from Carlisle, was admitted on the 6th of November 1860, with the symptoms of hip disease, from which he had suffered for 13 months, and during the last eight so severely as to be unable for work. The thigh was obstinately bent on the pelvis. The patient had had several blisters applied, and been a month in the Carlisle Infirmary. On the 8th the limb was straightened under the influence of chloroform, but not without a considerable degree of force, and then had the splint applied. On the 10th the pain of both hip and knee was almost gone. On the 3d of December the pains were quite gone. On the 12th the splint was taken off. On the 22d it was reapplied in consequence of some pain being again felt. On the 10th of January 1861 the splint was finally removed, the patient feeling quite well, and desiring to return home. On the 12th he was dismissed.

CASE IV.

D. C., aged 8, was admitted on the 31st of January 1861, with disease of the hip-joint. On the 2d of February the long splint was applied under chloroform, on account of the limb being bent. On the 26th the splint was taken off. On the 2d of March he was running about the ward quite well. On the 4th he was dismissed.

UNUNITED FRACTURE OF THE HUMERUS.

Ununited fracture seems a better expression for the purpose than artificial or preternatural joint, which is apt to suggest an erroneous idea of the condition denoted by it, since, in such cases, there is no new articular structure, but merely a ligamentous connection, which by its length and flexibility determines the extent of motion. This unfortunate result of a fracture, although it has been attributed to other sources, unquestionably, with hardly any exception, proceeds from the broken surfaces not being maintained in a state

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of sufficient rest during the process of reparation, and it is hence not surprising that the bone most liable to remain thus imperfect should be the humerus, which is doubly exposed to the exciting cause of disturbance through the frequent errors of using short splints, and allowing the patient too much freedom of locomotion. It is doubtless owing to the same circumstance that the restoration of rigidity in this situation has been attended with peculiar difficulty, which, indeed, was considered nearly insuperable until a few years ago, when a plan of treatment was adopted that has proved successful in every case subjected to its influence.

With regard to the treatment of ununited fractures in general, I had long been satisfied that the expedients in ordinary use, or at all events usually recommended, such as rubbing the broken ends together, stirring up their connecting medium by the introduction of needles, or passing setons through it, if they were ever found to prove successful, did so not from their own direct agency, but from the enforcement of rest con-

joined with their employment, which would have been equally efficient, although not associated with any other remedial means. By the careful application of proper splints the humerus may be kept sufficiently free from motion for the accomplishment of osseous union under ordinary circumstances ; but to obtain that absolute immobility which is requisite for effecting consolidation when delayed beyond the proper period, is attended with no small difficulty. Indeed, the only mode of attaining this object seems to be the same as that employed in regard to disease of the hip-joint, with a similar view, which produces its effect by completely suspending action in all the articulations of the limb. In this case, however, such simple means as the long splint are not applicable, and the only way of keeping all the joints at rest is to envelop the whole limb, together with the scapular region, in a firm case of starched pasteboard, extending from the finger points to the back of the shoulder.

When the morbid condition is too firmly established for being remedied by the mere en-

forcement of immobility, there should be no hesitation in resorting to the only other means really capable of overcoming the difficulty: this is, cutting off the broken ends of the bone, together with the ligamentous substance connecting them, so as to obtain two osseous surfaces, which may be placed in proper relation to each other, and then steadily maintained in it by the rigid pasteboard case, which should be prepared previously to the operation, and applied when the wound has ceased to discharge more matter than can be readily removed through an aperture in the covering. The incision should be on the outer side of the arm, and sufficiently free to afford ready access to the bone, which may be divided by a saw or the cutting plyers. Any vessels requiring the ligature are then to be carefully tied, and the edges of the wound being stitched together, the arm requires merely the ordinary treatment of a compound fracture, by the support of two lateral splints until it is ready for being placed in the case.

CASE I.

J. H., aged 34, a private of the ——— foot, while discharging some duty in the Redan, on the 8th of December 1855, after the occupation of Sebastopol, was blown up by a Russian mine, which had escaped detection, and, in addition to some slighter injuries, sustained a fracture of the left arm between two and three inches above the elbow. He walked up to his regimental hospital, where splints were applied, and retained for a month, when, there being no signs of union, the ends of the bone were rubbed together, and supported by a starched bandage. He left the Crimea on the 3d of February, and was sent to the hospital at Renkeioi, where a seton was passed through the seat of fracture, and retained for five weeks without any benefit. On the 20th of May he proceeded homewards, and, after a long voyage of nearly two months, arrived at Portsmouth, whence he was transferred to Chatham on the 17th of July. No attempt to restore rigidity was made there, and at the end of two months he was

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dismissed the service, with a pension of one shilling per day, in consideration of his disability, which was regarded as equal to the loss of a limb.

In the hope that relief might still be afforded, he applied to me on the 22d of January 1857, nearly fourteen months from the date of the injury ; and finding that the arm was entirely useless through the extreme mobility of the ends of the bone, which overlapped each other to the extent of more than an inch, I resolved to adopt the only procedure that, in my opinion, afforded any reasonable prospect of remedy under such circumstances, which was to remove the ends of the bone, and afterwards maintain the most perfect rest, by placing the whole limb under restraint. Proceeding with this view, my first step was to have the arm put in an easy position, with the elbow bent at a right angle, and then covered from beyond the shoulder to the tips of the fingers with pasteboard and starched bandages, so as to form a case, which, when it became dry, effectually prevented the slightest movement in

any of the joints. This case was next cut up on one side from end to end, so as to allow the arm to be taken out of it, and undergo the requisite operation, which was performed under chloroform. An incision having been made along the outer edge of the triceps, I exposed the upper end of the bone, and sawed off a portion of it sufficient for obtaining a complete osseous surface. The lower end, lying anterior to the shaft, could not be subjected to the saw, but was removed, to the extent of more than an inch, by cutting pliers. The arm was then supported by a couple of splints, and the patient lay quietly in bed for a fortnight, when the limb was placed in its paste-board case, in which an aperture had been made over the wound, then nearly healed, and discharging a very little matter that soon ceased entirely. The patient, feeling that the slightest motion was impossible, even if he had wished it, was relieved from any further restraint, and no longer remained in bed. At the end of a month, or altogether six weeks from the date of the operation, which was performed on the 30th of January,

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the limb was examined, and found to be quite straight, with a firm osseous union; so that the patient was able to leave the hospital, not only with his comfortable pension, but also with a perfectly useful arm.

CASE II.

J. R., aged 41, was admitted into the hospital on the 22d of January 1855, with an ununited fracture of the humerus of seven weeks' standing. It was seated at the distance of about a third from the lower end of the bone, and had been caused by falling from a scaffold of great height. The patient stated that immediately after the accident, splints of pasteboard were applied from the shoulder to the elbow, but not so as to prevent the motion of this joint. At the end of six weeks it was found that union had not taken place, and therefore my assistance was required.

On the 24th I directed the arm to be put up with rectangular pasteboard splints, extending from behind the shoulder to the tips of the fingers, covered with starched bandages, so as to

form a case that completely prevented motion in any of the joints. On the 1st March—that is, at the end of five weeks—it was found that osseous union had been established; but to save any risk of its being disturbed, the splints were reapplied for three weeks longer, when the patient left the hospital with a perfectly useful arm.

CASE III.

J. C., aged 41, was admitted on the 3d August 1858, with an ununited fracture of the humerus of twelve months' standing, about the middle of the bone. He stated that on account of the injury he had become a patient in the Newcastle infirmary, and remained there, under the ordinary treatment by splints, for eight weeks, when, feeling the bone still movable at the broken part, he applied to several different surgeons, who told him that the arm would get strong in time; but finding that the expectations thus held out were not verified, he had come to me for assistance.

On the 18th the starch and pasteboard case having been prepared by putting it on the arm,

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allowing it to remain until dry, and then taking it off, I cut down upon the ends of the bone which overlapped, and allowed of extensive motion. About a quarter of an inch having been removed from each of them, the edges of the wound were brought together and treated as usual. On the 27th the arm was put into the pasteboard case, in which an aperture had been made opposite the wound. On the 20th of September, suspecting from the appearance of the sore that it was suffering from some irritation, I searched the cavity and removed two small exfoliations. On the 16th of November osseous union was found to be established, and the patient, who slowly regained his health, which had been much disordered, was at length dismissed in every respect quite well on the 1st of March. I have heard that he afterwards continued to be able for his work, which was that of a sawyer.

CASE IV.

J. M'D., aged 38, was admitted on the 5th of March 1859, with an ununited fracture of the

humerus, of more than five months' standing. He stated that the injury happened in Glasgow, and that he went to the infirmary there, where splints were applied, but that three days afterwards a collection of matter formed, which required the splints to be removed every third day during the following seven weeks, when he was dismissed, and continued to be an out-patient for fifteen weeks longer. Finding no improvement, he then applied to me.

On his admission it appeared that the wound was quite healed, but the bone remained very flexible about its middle. On the 14th the paste-board case having been prepared as usual, I performed the operation as in the other case. On the 29th the arm was placed in the case, and on the 16th of August he was dismissed perfectly well.

CASE V.

A. M., aged 24, was admitted on the 5th of August last on account of an ununited fracture of the humerus resulting from a railway accident that happened three months before the time of

his application. The injury had been treated in the ordinary way without success, and then been subjected to the confinement of a starched bandage, which was at first employed simply, and again after rubbing the ends of the bone together, under chloroform. The patient then applied to me, with the arm very flexible at the seat of fracture and quite useless.

On the 21st I performed the operation, and supported the arm with ordinary wooden splints. Unfortunately the wound took on an unhealthy action, and instead of healing opened out considerably, so that the arm could not be placed in its pasteboard case until the 3d of October. Osseous union then commenced, but proceeded very slowly ; and on the 15th of January I found, that though the bone was rigid in one direction, it still admitted of slight flexion in the other. I therefore desired the arm to be taken out of the case, and to have a cushion applied opposite the side to which it was movable, so that a wooden splint being placed over this, the two ends of the bone could be drawn towards it, and thus ren-

dered perfectly immovable. On the 20th of February I found the osseous union at length complete—and the patient was dismissed on the 5th of March.

On the 20th of March the patient returned from the country with a renewal of the fracture, from falling over a fence. He had it put up again in the pasteboard case, and on the 13th of May, being quite well, was dismissed, with advice to be more careful for the future. I have lately learnt that the arm is now perfectly strong.

THE FORMATION OF NEW BONE IN NECROSIS, AND COMPOUND FRACTURE.

CASE.

W. M., aged 30, glazier, on the 30th of November last fell from a window of the Physician's Hall in Queen Street, about thirty feet from the ground, and sustained a compound fracture of the left leg, for which he was carried to the Hospital. The tibia alone had suffered, being broken transversely about the middle, but must have received

a severe shock, as its surface became bare to the extent of several inches, and showed that there would be an extensive exfoliation. At the end of six weeks the discharge, which had all along been profuse, appeared so disproportioned to the strength of the patient, who was greatly emaciated, and apparently threatened with the irritative fever which precedes sinking—that amputation seemed requisite as a prudential measure, while it was at the same time ascertained that the bone had died throughout its whole thickness, and thus rendered the operation indispensably necessary. For, although the patient might possibly escape the danger of longer delay, it was evident that in the event of his doing so, the limb could not be of any use to him from the deficiency of bone. It was therefore removed.

It was long ago ascertained by Sir A. Cooper that in a limb provided with two bones, a loss of substance in one of them—unless its extent be very limited—does not admit of osseous reparation; all that can be done towards it being a sort of conical prolongation of the divided extremities,

with a ligamentous connection, leaving a gap at the part. If, therefore, while the fibula remains entire, a considerable portion of the tibia, including its whole thickness, is removed, the result will be a false joint, rendering the leg useless. In the Anatomical Museum of the University there are preserved the bones of one that was amputated on this account—after the wound had completely healed—from the patient finding it worse than useless, and the same condition results when a large portion of bone dies from inflammation before the foundation of a substitute is sufficiently established, as happened in the case here represented, where I advised amputation at an early period, but was not allowed to perform it



until my prediction of what would happen had been realized.



It may seem surprising that in a case of necrosis, such as the case just mentioned, where the exfoliation, though extensive, did not comprehend the entire bone, the reproduction should have been so incomplete, while on other occasions of the same disease we find the whole shaft dead, and enclosed in a new osseous shell quite sufficient to supply its place. At no distant date it would not have been easy to explain this diversity of result satisfactorily, since the opinions entertained in regard to the reproduction of bone were very unsettled and conflicting. Duhamel, proceeding on his fanciful idea that there was an analogy between the bark of trees and the periosteum, believed that as the former, by successive layers

was converted into wood, the latter suffered a similar conversion into bone, so as to unite fractures, and to supply the place of exfoliation in cases of necrosis; while Haller, founding his opinion upon the original production of the osseous tissue through the gradual continuation of a vascular texture, denied that new bone could be formed except by the effusion of organizable matter from the old one. These two explanations, though long and keenly supported by their respective advocates, still left room for disputes and diversity of sentiment, which in my own case was opposed to the periosteal side of the question, until the truth became manifest to me no less suddenly than unexpectedly.

In the month of March 1835, a girl was brought into the hospital, and placed under my care, on account of intense inflammation affecting the leg and ankle, consequent upon a sprain sustained a few weeks previously. Finding the joint in a state of suppuration, and the tibia bare through nearly the whole of its extent, I deemed amputation requisite, and performed it accordingly.

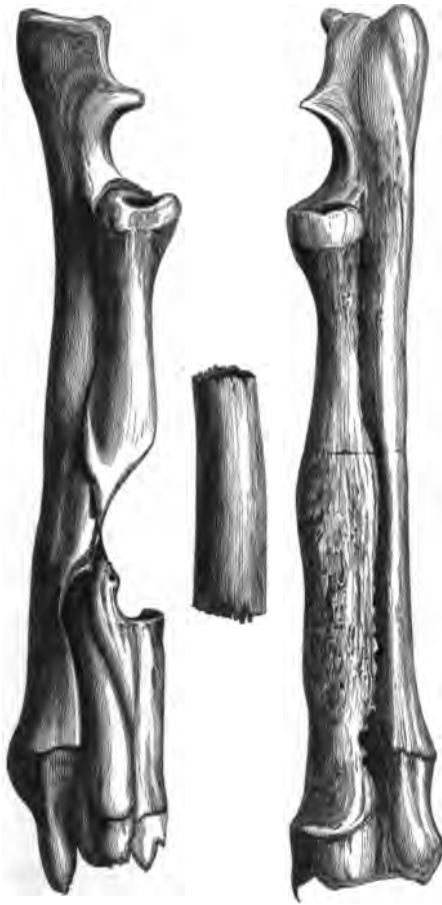
Then, wishing that the gentlemen present should see how completely the bone was dead, I made an incision along the skin, through the openings



that had been made for the discharge of matter ; and upon introducing my finger, was surprised to find the existence of a firm substance in the soft parts, which careful inspection revealed to be an osseous deposit in the periosteum—not proceeding from the bone, but in detached portions, which, if the requisite time had been afforded, would obviously have coalesced, so as to form a shell surrounding the old shaft. Although this observation appeared to me quite conclusive, and sufficient to render any additional proof unnecessary for establishing the long disputed

power of the periosteum to form new bone, I

thought it might be satisfactory to make some experiments on the subject.



With this view, I repeated the operation of

Sir A. Cooper upon the fore leg of a dog, and at the same time performed it upon the other leg, with the difference of preserving the periosteum, which was slit open and held aside, while an equal portion of the bone was removed. At the end of six weeks, instead of the gap presented by the first leg, I found, as here represented, a solid mass of bone. I then detached the periosteum in another dog, without removing the bone, and inserted a piece of tinfoil under the membrane, in which, at the end of a similar period, I found a thin plate of bone. Since that time, my eyes being opened to the truth, I have met with many confirmations of it in the human subject suffering under various forms of disease; and, in the case which has led to these remarks, there was a circumstance well worthy of notice with this view,—as the periosteum lying under the exfoliation had in its substance a thin piece of bone quite unconnected with the old one.

New bone may be formed, to a certain extent, by growing out from the surface of the old one, so as to lessen the size of an aperture,—such as

that made by trephining the skull,—or diminish the distance between two extremities, where there has been a loss of substance in one of the long bones ; but when produced copiously, as in a case of necrosis where there is complete restoration, its formation certainly takes place in the periosteum—any deficiency of which curtails its production to a corresponding amount : and hence the irregular apertures observed in a new osseous shell during the period of its formation, which in the language of necrosis are called “ *cloacæ*,” and were formerly attributed erroneously to the effect of absorption, induced by the presence of confined matter.

TUMOUR OF THE OS HUMERI REMOVED WITHOUT AMPUTATION.

Next to the lower jaw and the thigh bone, there is no part of the osseous system so frequently the seat of morbid growths as the humerus. They may be either firm and fibrous or soft and cerebriform, but whether of the one

kind or the other, with exception of the simple exostosis, have hitherto been always regarded as irremediable except by amputation. In the following case I pursued a different course, which, if adopted at an early period of the disease, may render so serious a mutilation less frequently necessary.

T. G., aged 43, from Alva, was admitted into the Hospital on the 9th of November 1860, suffering from a tumour of the right shoulder. It was situated under the deltoid, being about the size of a hen's egg, divided longitudinally, and having a very firm consistence, hardly distinguishable from that of the bone to which it was inseparably attached. The patient stated that he had felt pain in the bone about six months before, and had not noticed the swelling until a considerable time afterwards, since which it gradually increased in size, with a corresponding aggravation of pain.

Unwilling to propose amputation at the shoulder joint for a condition so little formidable in appearance—while there could be no doubt that this severe measure would in course of time become requisite, if the disease were allowed to

advance until it assumed a more serious aspect—I considered the practicability of affording relief in another way, and took for my guide the principle of practice which has been so well established in regard to tumours of the jaw. This is, that nothing more is required for an effectual remedy in all curable cases than removing the morbid growth, so as to divide the bone in a sound part beyond the confines of the disease. The cases of maxillary tumours, which when formerly treated by means of gouges and cauteries, applied directly to the seat of disease, uniformly proved miserable failures, are now remedied with such facility and certainty as contrast very favourably with the inefficiency of surgery in this department at no very distant date. Having thus reason to expect that removing the upper extremity of the humerus would be sufficient for the purpose in question, and knowing from the results of similar operations for caries that the arm, notwithstanding this shortening of the bone, would not be materially lessened in usefulness, I adopted the following procedure:—

On the 14th I made an incision from the coracoid process downwards to the extent of about four inches, opened the joint, detached the muscular attachments from the tuberosities of the humerus, protruded the head of the bone through the wound, and sawed it off below the tumour, which was found to consist of a thick cyst, partly osseous at the base, and containing small cysts in its substance, resting on a rough and spicular slightly excavated surface. No vessels required to be tied, and the patient suffered hardly any local or constitutional disturbance. He was dismissed on the 4th of January 1861, and I saw him lately in perfect health, with the wound soundly healed, and an arm perfectly strong and useful from the elbow downwards. When the muscles become shortened, they will, I have no doubt, restore command over the shoulder-joint also.

As morbid growths of the humerus almost always originate from the head or its immediate vicinity, it seems probable that if the disease could be recognized at an early period of its

progress, there would not unfrequently be an opportunity of affording effectual relief without resorting to the extreme measure of amputation. Thus, a tumour, the largest it is believed on record, growing from the humerus, which I removed with complete and permanent relief, although weighing nearly fourteen pounds, left the lower half of the bone perfectly unaltered. It must have commenced in the head, which was expanded into an enormous mass, of a cup shape, enclosing the glenoid cavity, and neighbouring part of the scapula, so that in its infancy this tumour might certainly have been removed without taking off the arm. Indeed, if even a third part of the bone required to be taken away along with the tumour, I should think it better to do this than amputate at the joint, since, if the muscles did not shorten sufficiently to restore useful action of the shoulder, the hand and forearm would at all events be completely serviceable. Many years ago, a fine healthy-looking boy from Kirkcaldy came under my care, on account of a tumour, the size of a small orange,

seated, contrary to custom, about the middle of the humerus. As it was very firm, and obviously of a fibrous or fibro-cartilaginous and non-malignant nature, I felt unwilling to amputate the arm, and therefore having exposed the growth by a free incision, and separation of the muscles, I applied the cutting plyers obliquely, first at one side of its base and then at the other, so as to effect detachment, but not without dividing the whole thickness of the bone, and consequently causing the formation of a false joint, which nevertheless did not prevent the patient, who grew up to vigorous manhood, from using his arm, through the assistance of a leather case that was buckled round it.

In connection with this subject, I may mention the case of a gentleman, who, not long ago, was placed under my care, on account of a fibrous tumour engaging the whole extent of the metacarpal bone of his thumb. In the hope that it might be of service as an opponent to the fingers, even though deprived of its supporting bone, I cut out the tumour by disarticulation at both of

its extremities, with the most satisfactory result, not only in regard to appearance, but from the hardly diminished usefulness of the hand.

AMPUTATION AT THE ANKLE.

Caries is frequently seated in the articular surfaces of the joint between the astragalus and os calcis, where it may seem to be of limited extent, and occasion no formidable symptoms, but nevertheless exhibits its characteristic obstinacy, and resists all means of remedy except amputation. A succession of such cases painfully impressing me with the imperfection of surgery which afforded no milder means of remedy than removal of the leg, suggested the idea of operating at the ankle, so as to preserve the thick integuments of the heel, and lessen the extent of mutilation.

J. W., aged 16, recommended to my care by Mr. Aitchison of Dunbar, and admitted into the hospital on the 5th of September 1842, afforded me an opportunity of trying this plan. He was suffering from disease of the foot, which, in conse-

quence of a sprain sustained twelve months before, had suppurated and ulcerated, so as to admit a probe into the joint between the os calcis and astragalus. I performed the operation without any difficulty, and as the ankle joint remained sound, did not remove the articulating surface, further than by taking away the malleolar projections of the tibia and fibula. The patient went home on the 2d of December, and did well afterwards, as appears from the following extract of a letter which Mr. Aitchison sent me four years subsequently to the operation: "He tells me he suffers no inconvenience from the stump, or the slightest tenderness. He has become a country tailor, and has often ten or fifteen miles a day to go to his work. He also says that with a few of his young companions he ran off to see the operations of the North British Railway at Penmanshiel tunnel, and must have walked fully thirty to thirty-five miles."

Very soon after this case had succeeded so well, I was requested by Mr. Goodsir, now my respected colleague, to visit his friend Dr. George

Wilson, the late Professor of Technology, who was then labouring under a complication of ailments, which threatened to blight the expectations that his talents and industry had led all who were acquainted with him to entertain. I found his naturally feeble frame extremely emaciated and exhausted by pulmonary disease of an alarming character, and also by extensive disease of the left ankle-joint, from which there was a profuse discharge of matter, and so much pain as to prevent sleep, except under the influence of opiates. The pulse was quick, and the tongue dry. In these circumstances, it was obvious that unless relieved from the local disease, he must soon sink under it; while, on the other hand, I could entertain no doubt that amputation of the leg would certainly prove fatal. I therefore proposed to operate at the ankle, and the patient readily assented to this, though fully informed as to the novelty of the proceeding. The operation was accordingly performed as upon the former occasion, but with the difference, that the extremities of the tibia and fibula being both diseased, were removed by

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CLINICAL OBSERVATIONS.

FRACTURE OF THE THIGH-BONE.

THERE are few principles more firmly established, or, as it seems to me, more entirely erroneous, than that extension is essential for the successful treatment of a fractured thigh-bone. I long believed and taught this as an incontrovertible truth, but for some time past have been satisfied that it is equally unsound in theory, and opposed to good practice. The “long splint” of Desault, which was contrived on purpose to effect extension by stretching the perineum and foot of the injured limb between the extremities of a wooden board, has been found so useful in the treatment of this fracture, that most people will probably regard the opinion just expressed with no less surprise

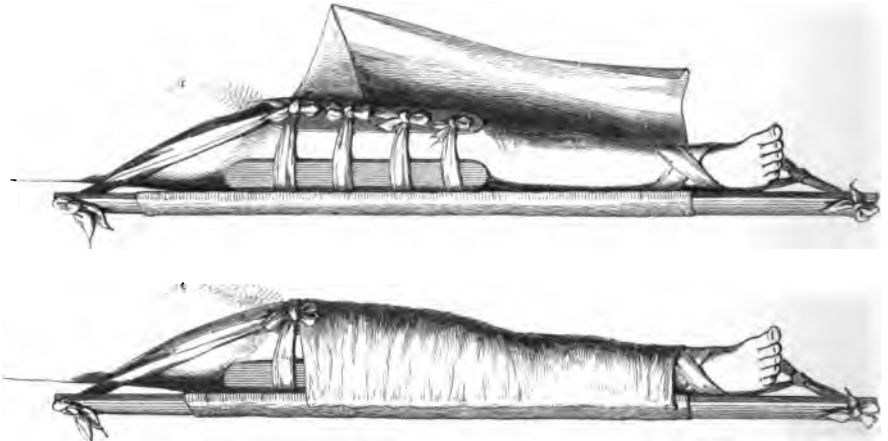
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than disapprobation. But if a case of the kind in question, which ultimately terminates favourably, is carefully watched during the process of recovery, it will be found that the bands employed for effecting extension are never tight, and merely tied with sufficient firmness to keep the apparatus in its place. It is when the fractured bone has been improperly set, and the limb is found to be shorter than its fellow, that the surgeon racks his patient by desperately tugging at the bandages, and all to no purpose, as the muscles are sure to conquer in this contest. Indeed, when it is recollected that the proper stimulus to muscular contraction is tension, the result of such a conflict will not appear so surprising as that any one should so far forget his physiological principles as to engage in it. Instead of exciting the muscles to contract by subjecting them to extension, the great objects in treating a fracture should be to place them at rest, and by protecting them from all sources of irritation to oppose their contractile action. For this purpose the preventing of motion is of most consequence, since

every displacement of the broken surfaces must tend to irritate their muscular coverings, and hence the great value of Mr. Pott's improvement in the construction of splints, by making them long enough to extend beyond the joints at both ends of the broken bone. It is upon the same principle that the splint of Desault proves so useful, since its influence extends over all the articulations of the limb, and by preventing any one of them from moving, keeps the whole in a state of perfect quiet.

In treating a fracture of the thigh-bone, the first step should be to draw out the limb to its proper length, direction, and shape; and if this cannot be done readily on account of the patient's involuntary resistance, it may be accomplished through the aid of chloroform. Two splints of wood, leather, or pasteboard, the full length of the thigh, from the trochanter major on one side, and the perineum on the other, to below the knee on both sides, are then to be applied and secured by four or five looped bandages, and lastly, the long splint wrapped in a sheet or table-cloth, of which

enough is left free for covering the limb, being placed by the patient's side, the loose portion is brought over and fastened to the board, after which, by means of the perineal and ankle bands, together with one round the body, the whole apparatus is rendered secure.



My present house-surgeon has had three cases of fractured thigh under his charge during the last three months, and the gentleman who preceded him had thirteen in the course of twelve months. They have given me the following table of their results :--

“CASES of FRACTURED THIGHS treated in the Surgical Clinical Wards of the Royal Infirmary, from September 1859 to March 1861.

Case.	Name.	Age.	Result.	Time.
1	A. H.	25	Cured	42 days
2	J. B.	18	Cured	90 „
3	A. A.	9	Cured	42 „
4	W. W.	40	Cured	54 „
5	J. O.	22	Cured	73 „
6	J. D.	5	Cured	28 „
7	P. M'N.	45	Cured	52 „
8	R. R.	2	Cured	17 „
9	P. W.	14	Cured	75 „
10	A. N.	5	Cured	35 „
11	P. F.	14	Cured	56 „
12	W. B.	12	Cured	35 „
13	M. C.	7	Cured	42 „
14	G. G.	55	Cured	58 „
15	J. K.	10	Cured	42 „
16	J. D.	17	Cured	35 „

“All of the cases here mentioned were treated without extension. In No. 11 the limbs when compared were found to be precisely of the same length. In No. 2 there was shortening to the extent of one inch, from the complication of an oblique fracture of the leg. In the other cases, the

shortening varied from a half to three quarters of an inch, but in no instance made any possible difference in the gait of the patient.

“JOSEPH BELL, M.D.

“THOMAS ANNANDALE.”

DISEASE OF THE HIP-JOINT.

It seems surprising that with all the nicety of modern nomenclature, there should not have been devised a more distinct appellation for one of the most frequent and serious ailments to which the human body is liable, than disease of the hip-joint. This vagueness of language no doubt proceeds from the uncertainty which still exists as to the nature and origin of the disease in question. Sir B. Brodie supposed that it generally commenced with ulceration of the cartilages ; but such a view is quite inconsistent with either the symptoms, or the resulting condition in the event of recovery. Instead of suffering the excessive pain caused by motion or pressure, which characterises disease of the cartilages, the patient

is usually able to stand and walk on the affected limb for weeks or even months after beginning to shew signs of the complaint ; and if he recovers from it before the occurrence of suppuration, generally retains no trace of its existence, which could not be the case if the surfaces of articulation had been eroded. It may be added that the disease is most apt to commence at a time of life little prone to independent morbid affections of the articular cartilage, while the absence of swelling, and facility of restoration to a sound state, are quite opposed to the idea of synovial degeneration. In these circumstances it appears most probable that the morbid condition is originally an irritation of the osseous texture, which admits of either returning to health, or going on to alteration of structure, with its usual attendant of suppuration, and consequence of ankylosis or caries.

Disease of the hip-joint is extremely frequent in Scotland, as in other countries possessing a similar climate, so that there is ample opportunity of observing its progress both in public and

private practice. Formerly, cases of this kind were regarded with dread, as sources of protracted suffering and subjects of ineffectual treatment, but they are now viewed very differently, since, if properly managed before suppuration has taken place, they may reasonably, or almost with certainty, be expected to afford a favourable result.

This great change has proceeded from the disuse of counter-irritations, and the establishment of perfect rest, as the grand means of remedy. It appears from the books published in London and elsewhere, and also from the cases which not unfrequently come under my observation, that this salutary reformation has not yet become general, and hence probably the reason of so many operations performed on the southern side of the Tweed for removing the head of the thigh-bone, which, even if we had the wish to do so, there would be little opportunity of repeating here.

The enforcement of rest in order to prove effectual must be complete, since the joint more immediately concerned cannot be kept quiet

unless all the articulations and muscles of the limb are prevented from moving or acting; for moving the toes necessarily moves the ankle; moving the ankle moves the knee; and moving the knee moves the hip; while, even if the last-mentioned joint were so constrained by bandages as not to admit of motion, the action of its muscles would cause such compression of the articulating surfaces as might prevent the object in view from being fully attained.

The "long splint" fortunately affords a simple, easy, and effectual means of accomplishing this general quietude, and to it unquestionably is due the good effect of modern practice. It must be long enough to extend from the false ribs to a little beyond the foot, and equal in breadth to the diameter of the limb, being applied as for fracture of the thigh-bone, but without any additional support. In some cases the thigh is so bent upon the body that it cannot be straightened without causing great pain, and using much force, but unless the bone has become dislocated, may always, through the influence of chloroform, be easily

placed in a proper position, and does not shew any tendency to resume its abnormal position after consciousness is regained. The length of time during which the splint is required varies with the circumstances of the case, but in general does not extend beyond from three to six weeks. The patient's friends are frequently apprehensive of the health suffering from confinement, but are soon satisfied on trial that the effect is quite contrary. The only medical treatment required is regulation of the bowels and diet—which should be nourishing, but not stimulating—wine being forbidden, and animal food restricted within narrow limits. Cod liver oil, if it can be taken without repugnance, will be useful; but nothing can be more preposterous than the common practice of administering iodine, and mercury in such cases, or on other occasions when a strumous constitution is suspected.

CASE I.

A. D., aged 6, from Kinross, was admitted on the 17th of February 1860. Since the beginning of the year he had been falling off in flesh and strength. He complained of pain in the left hip and knee. The limb being considerably drawn up, and resisting extension, the long splint was applied through the assistance of chloroform, which allowed the limb to be straightened. On the 12th of April the splint was taken off, the limb being straight, and the pain gone. On the 16th the patient was dismissed cured.

CASE II.

F. C., aged 14, an emaciated unhealthy looking lad, was admitted on the 17th of February 1860, suffering so severely from hip disease that his father had to carry him. On the 22d the long splint was applied as usual. On the 23d of March the pain was gone. On the 28th he was dismissed cured.

CASE III.

F. G., aged 23, from Carlisle, was admitted on the 6th of November 1860, with the symptoms of hip disease, from which he had suffered for 13 months, and during the last eight so severely as to be unable for work. The thigh was obstinately bent on the pelvis. The patient had had several blisters applied, and been a month in the Carlisle Infirmary. On the 8th the limb was straightened under the influence of chloroform, but not without a considerable degree of force, and then had the splint applied. On the 10th the pain of both hip and knee was almost gone. On the 3d of December the pains were quite gone. On the 12th the splint was taken off. On the 22d it was reapplied in consequence of some pain being again felt. On the 10th of January 1861 the splint was finally removed, the patient feeling quite well, and desiring to return home. On the 12th he was dismissed.

CASE IV.

D. C., aged 8, was admitted on the 31st of January 1861, with disease of the hip-joint. On the 2d of February the long splint was applied under chloroform, on account of the limb being bent. On the 26th the splint was taken off. On the 2d of March he was running about the ward quite well. On the 4th he was dismissed.

UNUNITED FRACTURE OF THE HUMERUS.

Ununited fracture seems a better expression for the purpose than artificial or preternatural joint, which is apt to suggest an erroneous idea of the condition denoted by it, since, in such cases, there is no new articular structure, but merely a ligamentous connection, which by its length and flexibility determines the extent of motion. This unfortunate result of a fracture, although it has been attributed to other sources, unquestionably, with hardly any exception, proceeds from the broken surfaces not being maintained in a state

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of sufficient rest during the process of reparation, and it is hence not surprising that the bone most liable to remain thus imperfect should be the humerus, which is doubly exposed to the exciting cause of disturbance through the frequent errors of using short splints, and allowing the patient too much freedom of locomotion. It is doubtless owing to the same circumstance that the restoration of rigidity in this situation has been attended with peculiar difficulty, which, indeed, was considered nearly insuperable until a few years ago, when a plan of treatment was adopted that has proved successful in every case subjected to its influence.

With regard to the treatment of ununited fractures in general, I had long been satisfied that the expedients in ordinary use, or at all events usually recommended, such as rubbing the broken ends together, stirring up their connecting medium by the introduction of needles, or passing setons through it, if they were ever found to prove successful, did so not from their own direct agency, but from the enforcement of rest con-

joined with their employment, which would have been equally efficient, although not associated with any other remedial means. By the careful application of proper splints the humerus may be kept sufficiently free from motion for the accomplishment of osseous union under ordinary circumstances ; but to obtain that absolute immobility which is requisite for effecting consolidation when delayed beyond the proper period, is attended with no small difficulty. Indeed, the only mode of attaining this object seems to be the same as that employed in regard to disease of the hip-joint, with a similar view, which produces its effect by completely suspending action in all the articulations of the limb. In this case, however, such simple means as the long splint are not applicable, and the only way of keeping all the joints at rest is to envelop the whole limb, together with the scapular region, in a firm case of starched pasteboard, extending from the finger points to the back of the shoulder.

When the morbid condition is too firmly established for being remedied by the mere en-

forcement of immobility, there should be no hesitation in resorting to the only other means really capable of overcoming the difficulty : this is, cutting off the broken ends of the bone, together with the ligamentous substance connecting them, so as to obtain two osseous surfaces, which may be placed in proper relation to each other, and then steadily maintained in it by the rigid pasteboard case, which should be prepared previously to the operation, and applied when the wound has ceased to discharge more matter than can be readily removed through an aperture in the covering. The incision should be on the outer side of the arm, and sufficiently free to afford ready access to the bone, which may be divided by a saw or the cutting plyers. Any vessels requiring the ligature are then to be carefully tied, and the edges of the wound being stitched together, the arm requires merely the ordinary treatment of a compound fracture, by the support of two lateral splints until it is ready for being placed in the case.

CASE I.

J. H., aged 34, a private of the ——— foot, while discharging some duty in the Redan, on the 8th of December 1855, after the occupation of Sebastopol, was blown up by a Russian mine, which had escaped detection, and, in addition to some slighter injuries, sustained a fracture of the left arm between two and three inches above the elbow. He walked up to his regimental hospital, where splints were applied, and retained for a month, when, there being no signs of union, the ends of the bone were rubbed together, and supported by a starched bandage. He left the Crimea on the 3d of February, and was sent to the hospital at Renkeioi, where a seton was passed through the seat of fracture, and retained for five weeks without any benefit. On the 20th of May he proceeded homewards, and, after a long voyage of nearly two months, arrived at Portsmouth, whence he was transferred to Chatham on the 17th of July. No attempt to restore rigidity was made there, and at the end of two months he was

dismissed the service, with a pension of one shilling per day, in consideration of his disability, which was regarded as equal to the loss of a limb.

In the hope that relief might still be afforded, he applied to me on the 22d of January 1857, nearly fourteen months from the date of the injury ; and finding that the arm was entirely useless through the extreme mobility of the ends of the bone, which overlapped each other to the extent of more than an inch, I resolved to adopt the only procedure that, in my opinion, afforded any reasonable prospect of remedy under such circumstances, which was to remove the ends of the bone, and afterwards maintain the most perfect rest, by placing the whole limb under restraint. Proceeding with this view, my first step was to have the arm put in an easy position, with the elbow bent at a right angle, and then covered from beyond the shoulder to the tips of the fingers with pasteboard and starched bandages, so as to form a case, which, when it became dry, effectually prevented the slightest movement in

any of the joints. This case was next cut up on one side from end to end, so as to allow the arm to be taken out of it, and undergo the requisite operation, which was performed under chloroform. An incision having been made along the outer edge of the triceps, I exposed the upper end of the bone, and sawed off a portion of it sufficient for obtaining a complete osseous surface. The lower end, lying anterior to the shaft, could not be subjected to the saw, but was removed, to the extent of more than an inch, by cutting pliers. The arm was then supported by a couple of splints, and the patient lay quietly in bed for a fortnight, when the limb was placed in its paste-board case, in which an aperture had been made over the wound, then nearly healed, and discharging a very little matter that soon ceased entirely. The patient, feeling that the slightest motion was impossible, even if he had wished it, was relieved from any further restraint, and no longer remained in bed. At the end of a month, or altogether six weeks from the date of the operation, which was performed on the 30th of January,

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the limb was examined, and found to be quite straight, with a firm osseous union ; so that the patient was able to leave the hospital, not only with his comfortable pension, but also with a perfectly useful arm.

CASE II.

J. R., aged 41, was admitted into the hospital on the 22d of January 1855, with an ununited fracture of the humerus of seven weeks' standing. It was seated at the distance of about a third from the lower end of the bone, and had been caused by falling from a scaffold of great height. The patient stated that immediately after the accident, splints of pasteboard were applied from the shoulder to the elbow, but not so as to prevent the motion of this joint. At the end of six weeks it was found that union had not taken place, and therefore my assistance was required.

On the 24th I directed the arm to be put up with rectangular pasteboard splints, extending from behind the shoulder to the tips of the fingers, covered with starched bandages, so as to

form a case that completely prevented motion in any of the joints. On the 1st March—that is, at the end of five weeks—it was found that osseous union had been established ; but to save any risk of its being disturbed, the splints were reapplied for three weeks longer, when the patient left the hospital with a perfectly useful arm.

CASE III.

J. C., aged 41, was admitted on the 3d August 1858, with an ununited fracture of the humerus of twelve months' standing, about the middle of the bone. He stated that on account of the injury he had become a patient in the Newcastle infirmary, and remained there, under the ordinary treatment by splints, for eight weeks, when, feeling the bone still movable at the broken part, he applied to several different surgeons, who told him that the arm would get strong in time ; but finding that the expectations thus held out were not verified, he had come to me for assistance.

On the 18th the starch and pasteboard case having been prepared by putting it on the arm,

allowing it to remain until dry, and then taking it off, I cut down upon the ends of the bone which overlapped, and allowed of extensive motion. About a quarter of an inch having been removed from each of them, the edges of the wound were brought together and treated as usual. On the 27th the arm was put into the pasteboard case, in which an aperture had been made opposite the wound. On the 20th of September, suspecting from the appearance of the sore that it was suffering from some irritation, I searched the cavity and removed two small exfoliations. On the 16th of November osseous union was found to be established, and the patient, who slowly regained his health, which had been much disordered, was at length dismissed in every respect quite well on the 1st of March. I have heard that he afterwards continued to be able for his work, which was that of a sawyer.

CASE IV.

J. M'D., aged 38, was admitted on the 5th of March 1859, with an ununited fracture of the

humerus, of more than five months' standing. He stated that the injury happened in Glasgow, and that he went to the infirmary there, where splints were applied, but that three days afterwards a collection of matter formed, which required the splints to be removed every third day during the following seven weeks, when he was dismissed, and continued to be an out-patient for fifteen weeks longer. Finding no improvement, he then applied to me.

On his admission it appeared that the wound was quite healed, but the bone remained very flexible about its middle. On the 14th the paste-board case having been prepared as usual, I performed the operation as in the other case. On the 29th the arm was placed in the case, and on the 16th of August he was dismissed perfectly well.

CASE V.

A. M., aged 24, was admitted on the 5th of August last on account of an ununited fracture of the humerus resulting from a railway accident that happened three months before the time of

his application. The injury had been treated in the ordinary way without success, and then been subjected to the confinement of a starched bandage, which was at first employed simply, and again after rubbing the ends of the bone together, under chloroform. The patient then applied to me, with the arm very flexible at the seat of fracture and quite useless.

On the 21st I performed the operation, and supported the arm with ordinary wooden splints. Unfortunately the wound took on an unhealthy action, and instead of healing opened out considerably, so that the arm could not be placed in its pasteboard case until the 3d of October. Osseous union then commenced, but proceeded very slowly; and on the 15th of January I found, that though the bone was rigid in one direction, it still admitted of slight flexion in the other. I therefore desired the arm to be taken out of the case, and to have a cushion applied opposite the side to which it was movable, so that a wooden splint being placed over this, the two ends of the bone could be drawn towards it, and thus ren-

dered perfectly immovable. On the 20th of February I found the osseous union at length complete—and the patient was dismissed on the 5th of March.

On the 20th of March the patient returned from the country with a renewal of the fracture, from falling over a fence. He had it put up again in the pasteboard case, and on the 13th of May, being quite well, was dismissed, with advice to be more careful for the future. I have lately learnt that the arm is now perfectly strong.

THE FORMATION OF NEW BONE IN NECROSIS, AND COMPOUND FRACTURE.

CASE.

W. M., aged 30, glazier, on the 30th of November last fell from a window of the Physician's Hall in Queen Street, about thirty feet from the ground, and sustained a compound fracture of the left leg, for which he was carried to the Hospital. The tibia alone had suffered, being broken transversely about the middle, but must have received

a severe shock, as its surface became bare to the extent of several inches, and showed that there would be an extensive exfoliation. At the end of six weeks the discharge, which had all along been profuse, appeared so disproportioned to the strength of the patient, who was greatly emaciated, and apparently threatened with the irritative fever which precedes sinking—that amputation seemed requisite as a prudential measure, while it was at the same time ascertained that the bone had died throughout its whole thickness, and thus rendered the operation indispensably necessary. For, although the patient might possibly escape the danger of longer delay, it was evident that in the event of his doing so, the limb could not be of any use to him from the deficiency of bone. It was therefore removed.

It was long ago ascertained by Sir A. Cooper that in a limb provided with two bones, a loss of substance in one of them—unless its extent be very limited—does not admit of osseous reparation; all that can be done towards it being a sort of conical prolongation of the divided extremities,

with a ligamentous connection, leaving a gap at the part. If, therefore, while the fibula remains entire, a considerable portion of the tibia, including its whole thickness, is removed, the result will be a false joint, rendering the leg useless. In the Anatomical Museum of the University there are preserved the bones of one that was amputated on this account—after the wound had completely healed—from the patient finding it worse than useless, and the same condition results when a large portion of bone dies from inflammation before the foundation of a substitute is sufficiently established, as happened in the case here represented, where I advised amputation at an early period, but was not allowed to perform it



CASE II.

W. R., aged 14, called at the hospital on the 7th of May last, to shew his right arm, of which I had cut out the elbow-joint about a year before, on account of ankylosis, following an injury. The limb was perfectly sound and strong, admitting of every movement, as if nothing had been done to it.

CASE III.

E. M., aged 22, had her elbow-joint cut out about two years ago. She is now the sole servant of an invalid old gentleman, and not only does all the work of his house, but also acts as nurse in very difficult circumstances. The arm is so perfect, that no defect can be detected in it.

RESTORATION OF THE NOSE.

There certainly is no feature which, by its removal, so completely disfigures the human coun-

was converted into wood, the latter suffered a similar conversion into bone, so as to unite fractures, and to supply the place of exfoliation in cases of necrosis; while Haller, founding his opinion upon the original production of the osseous tissue through the gradual continuation of a vascular texture, denied that new bone could be formed except by the effusion of organizable matter from the old one. These two explanations, though long and keenly supported by their respective advocates, still left room for disputes and diversity of sentiment, which in my own case was opposed to the periosteal side of the question, until the truth became manifest to me no less suddenly than unexpectedly.

In the month of March 1835, a girl was brought into the hospital, and placed under my care, on account of intense inflammation affecting the leg and ankle, consequent upon a sprain sustained a few weeks previously. Finding the joint in a state of suppuration, and the tibia bare through nearly the whole of its extent, I deemed amputation requisite, and performed it accordingly.

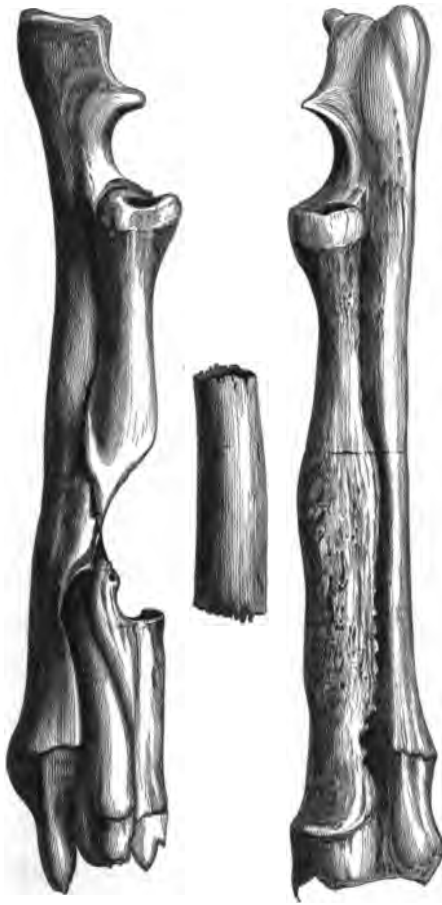
Then, wishing that the gentlemen present should see how completely the bone was dead, I made an incision along the skin, through the openings



that had been made for the discharge of matter; and upon introducing my finger, was surprised to find the existence of a firm substance in the soft parts, which careful inspection revealed to be an osseous deposit in the periosteum—not proceeding from the bone, but in detached portions, which, if the requisite time had been afforded, would obviously have coalesced, so as to form a shell surrounding the old shaft. Although this observation appeared to me quite conclusive, and sufficient to render any additional proof unnecessary for establishing the long disputed

power of the periosteum to form new bone, I

thought it might be satisfactory to make some experiments on the subject.



With this view, I repeated the operation of

Sir A. Cooper upon the fore leg of a dog, and at the same time performed it upon the other leg, with the difference of preserving the periosteum, which was slit open and held aside, while an equal portion of the bone was removed. At the end of six weeks, instead of the gap presented by the first leg, I found, as here represented, a solid mass of bone. I then detached the periosteum in another dog, without removing the bone, and inserted a piece of tinfoil under the membrane, in which, at the end of a similar period, I found a thin plate of bone. Since that time, my eyes being opened to the truth, I have met with many confirmations of it in the human subject suffering under various forms of disease; and, in the case which has led to these remarks, there was a circumstance well worthy of notice with this view,—as the periosteum lying under the exfoliation had in its substance a thin piece of bone quite unconnected with the old one.

New bone may be formed, to a certain extent, by growing out from the surface of the old one, so as to lessen the size of an aperture,—such as

that made by trephining the skull,—or diminish the distance between two extremities, where there has been a loss of substance in one of the long bones ; but when produced copiously, as in a case of necrosis where there is complete restoration, its formation certainly takes place in the periosteum—any deficiency of which curtails its production to a corresponding amount : and hence the irregular apertures observed in a new osseous shell during the period of its formation, which in the language of necrosis are called “ *cloacæ*,” and were formerly attributed erroneously to the effect of absorption, induced by the presence of confined matter.

TUMOUR OF THE OS HUMERI REMOVED WITHOUT AMPUTATION.

Next to the lower jaw and the thigh bone, there is no part of the osseous system so frequently the seat of morbid growths as the humerus. They may be either firm and fibrous or soft and cerebriform, but whether of the one

kind or the other, with exception of the simple exostosis, have hitherto been always regarded as irremediable except by amputation. In the following case I pursued a different course, which, if adopted at an early period of the disease, may render so serious a mutilation less frequently necessary.

T. G., aged 43, from Alva, was admitted into the Hospital on the 9th of November 1860, suffering from a tumour of the right shoulder. It was situated under the deltoid, being about the size of a hen's egg, divided longitudinally, and having a very firm consistence, hardly distinguishable from that of the bone to which it was inseparably attached. The patient stated that he had felt pain in the bone about six months before, and had not noticed the swelling until a considerable time afterwards, since which it gradually increased in size, with a corresponding aggravation of pain.

Unwilling to propose amputation at the shoulder joint for a condition so little formidable in appearance—while there could be no doubt that this severe measure would in course of time become requisite, if the disease were allowed to

advance until it assumed a more serious aspect—I considered the practicability of affording relief in another way, and took for my guide the principle of practice which has been so well established in regard to tumours of the jaw. This is, that nothing more is required for an effectual remedy in all curable cases than removing the morbid growth, so as to divide the bone in a sound part beyond the confines of the disease. The cases of maxillary tumours, which when formerly treated by means of gouges and cauteries, applied directly to the seat of disease, uniformly proved miserable failures, are now remedied with such facility and certainty as contrast very favourably with the inefficiency of surgery in this department at no very distant date. Having thus reason to expect that removing the upper extremity of the humerus would be sufficient for the purpose in question, and knowing from the results of similar operations for caries that the arm, notwithstanding this shortening of the bone, would not be materially lessened in usefulness, I adopted the following procedure :—

On the 14th I made an incision from the coracoid process downwards to the extent of about four inches, opened the joint, detached the muscular attachments from the tuberosities of the humerus, protruded the head of the bone through the wound, and sawed it off below the tumour, which was found to consist of a thick cyst, partly osseous at the base, and containing small cysts in its substance, resting on a rough and spicular slightly excavated surface. No vessels required to be tied, and the patient suffered hardly any local or constitutional disturbance. He was dismissed on the 4th of January 1861, and I saw him lately in perfect health, with the wound soundly healed, and an arm perfectly strong and useful from the elbow downwards. When the muscles become shortened, they will, I have no doubt, restore command over the shoulder-joint also.

As morbid growths of the humerus almost always originate from the head or its immediate vicinity, it seems probable that if the disease could be recognized at an early period of its

progress, there would not unfrequently be an opportunity of affording effectual relief without resorting to the extreme measure of amputation. Thus, a tumour, the largest it is believed on record, growing from the humerus, which I removed with complete and permanent relief, although weighing nearly fourteen pounds, left the lower half of the bone perfectly unaltered. It must have commenced in the head, which was expanded into an enormous mass, of a cup shape, enclosing the glenoid cavity, and neighbouring part of the scapula, so that in its infancy this tumour might certainly have been removed without taking off the arm. Indeed, if even a third part of the bone required to be taken away along with the tumour, I should think it better to do this than amputate at the joint, since, if the muscles did not shorten sufficiently to restore useful action of the shoulder, the hand and forearm would at all events be completely serviceable. Many years ago, a fine healthy-looking boy from Kirkcaldy came under my care, on account of a tumour, the size of a small orange,

seated, contrary to custom, about the middle of the humerus. As it was very firm, and obviously of a fibrous or fibro cartilaginous and non-malignant nature, I felt unwilling to amputate the arm, and therefore having exposed the growth by a free incision, and separation of the muscles, I applied the cutting plyers obliquely, first at one side of its base and then at the other, so as to effect detachment, but not without dividing the whole thickness of the bone, and consequently causing the formation of a false joint, which nevertheless did not prevent the patient, who grew up to vigorous manhood, from using his arm, through the assistance of a leather case that was buckled round it.

In connection with this subject, I may mention the case of a gentleman, who, not long ago, was placed under my care, on account of a fibrous tumour engaging the whole extent of the metacarpal bone of his thumb. In the hope that it might be of service as an opponent to the fingers, even though deprived of its supporting bone, I cut out the tumour by disarticulation at both of

its extremities, with the most satisfactory result, not only in regard to appearance, but from the hardly diminished usefulness of the hand.

AMPUTATION AT THE ANKLE.

Caries is frequently seated in the articular surfaces of the joint between the astragalus and os calcis, where it may seem to be of limited extent, and occasion no formidable symptoms, but nevertheless exhibits its characteristic obstinacy, and resists all means of remedy except amputation. A succession of such cases painfully impressing me with the imperfection of surgery which afforded no milder means of remedy than removal of the leg, suggested the idea of operating at the ankle, so as to preserve the thick integuments of the heel, and lessen the extent of mutilation.

J. W., aged 16, recommended to my care by Mr. Aitchison of Dunbar, and admitted into the hospital on the 5th of September 1842, afforded me an opportunity of trying this plan. He was suffering from disease of the foot, which, in conse-

divide the whole sphincter, that the incision should be very limited, and that in fact all that was necessary was to convert the fissure into a simple incision. I have notes on the subject, although I cannot at present lay my hands on them, but my recollection of the matter is clear.—Yours, &c.

JAMES DUNCAN.

The following case of a much-respected member of the profession will shew that my practice continued to be the same at a later date, though still long before the period at which this mode of procedure has been supposed to have originated :—

Dr. A. of A. to Mr. SYME.

Although it is now upwards of twenty years since you operated upon me for fissure of the anus (if the trifling incision you made can be called an operation), I have a distinct recollection of the circumstances of my case.

I had been ill for many months before putting myself into your hands. During most of that time I had suffered intensely, so much so that I

Wilson, the late Professor of Technology, who was then labouring under a complication of ailments, which threatened to blight the expectations that his talents and industry had led all who were acquainted with him to entertain. I found his naturally feeble frame extremely emaciated and exhausted by pulmonary disease of an alarming character, and also by extensive disease of the left ankle-joint, from which there was a profuse discharge of matter, and so much pain as to prevent sleep, except under the influence of opiates. The pulse was quick, and the tongue dry. In these circumstances, it was obvious that unless relieved from the local disease, he must soon sink under it; while, on the other hand, I could entertain no doubt that amputation of the leg would certainly prove fatal. I therefore proposed to operate at the ankle, and the patient readily assented to this, though fully informed as to the novelty of the proceeding. The operation was accordingly performed as upon the former occasion, but with the difference, that the extremities of the tibia and fibula being both diseased, were removed by

the saw. The result will be best explained by the following statement, dated 9th June 1846 :—

Dr. WILSON to Mr. SYME.

Edinburgh, 9th June 1846.

DEAR SIR— You will remember that I lost my foot in January 1843. The stump healed rapidly, and in six weeks had all closed, except one small aperture, from which a slight watery discharge continued to come till the month of June, when it suddenly ceased, and complete cicatrization occurred. Since that period, I have experienced no pain or uneasy sensation of any kind, in the stump, nor any tenderness, making standing or walking irksome or unpleasant. I have very rarely experienced the feeling of the lost foot being still part of the body and the seat of pain, which is so common a complaint among those who have been deprived of limbs. For the last two years, I am not aware that I have known this sensation at all ; if I have, it has made no impression on my memory. I can lean the weight

of my body on the naked stump without inconvenience ; and, with a single stocking over it, am in the habit of walking through the house when my boot is not at hand.

The artificial foot I wear, within an ordinary half boot, is made of light wood, with a spring across the part corresponding to the roots of the toes. This spring, however, is of no use, as the rigidity of the boot enclosing it prevents its acting. The foot might as well be made of one piece of wood. At the heel it is hollowed into a concavity, corresponding to the shape of the stump, but rising up before and behind into two prolongations, which, seen in section, would resemble the horns of a crescent. The foot is cased in shamois leather, which is carried up from the borders of the concavity, and cut into the shape of the upper part of a lady's cloth boot. Like it, also, it is laced up the inner side, and has a tongue ; the latter is made of thick soft leather, and is of much service in securing the fitting of the foot. There are no straps or buckles, or steel supports of any kind, nor are they needed. From

the bulbous form of the stump, and its circumference being considerably greater than that of the leg above it, the lacing of the upper leather completely suffices to hold the artificial foot on. It would be impossible, indeed, to pull it off without loosening the lace or tearing the leather.

The artificial foot, as originally furnished, was thickly padded; but I found the padding so apt to shift, and so liable to become uncomfortable from saturation with moisture, that I had it all removed. It is much more convenient to pad the stump, by covering it with two or more worsted or shamois leather stockings, which can be changed at pleasure. I use a stick in walking; but, except on rough causeways or very uneven ground, it is unnecessary, neither is it requisite in ascending or descending stairs.

The results of an inflammatory attack of the lungs make me a bad walker, nor have I ever ascertained how long a pedestrian journey I could achieve; but I have stood for six hours (not consecutively) daily, for months together, without

any inconvenience, and I wear the artificial foot, without intermission, from morning till bed-time.

—Very sincerely,

GEORGE WILSON.

The evidence of these cases, and many others that speedily followed them, induced me to recommend amputation at the ankle with all the earnestness in my power, and notwithstanding the resistance of some obstacles, which even now are not entirely overcome, I have the satisfaction of knowing that this operation has long been established in the practice of surgery both at home and abroad. The obstacles to which I allude may be divided into objections, and would-be improvements. Of the former, the only one that requires notice is the risk of sloughing to which the flap is alleged to be exposed. That the flap may, and probably will still occasionally slough, is unhappily too true, but that this result is always owing to an error in the mode of performance, I think does not admit of any question. For as the integument being detached from its subjacent connections, can derive nourishment only from the

anastomosing vessels, it is evident that if scored crossways, instead of being separated by cutting parallel to the surface, the flap must lose its vitality. The surgeon of a large hospital told me, that having heard of amputation at the ankle, he had performed the operation repeatedly, according to the directions of a London Surgical Manual, with the invariable result of sloughing, but that then being advised by a friend to look into my own book, he had altered the procedure with constant success. This objection, therefore, has obviously no place in regard to good surgery.

The "improvements" have consisted chiefly of variations in the line of incision, so as to alter the form of the flap, and render it more or less inconvenient for the purpose. It is true that the state of soft parts occasionally requires some deviation from the usual course, but when it leaves free room for choice, there can be no reasonable doubt as to the simple transverse incision originally recommended being the most convenient. The only other alteration worthy of notice is that

of Professor Pirogoff, of St. Petersburg, who proposed to retain the tuberosity of the os calcis by sawing it off before the disarticulation was completed, and thus, so far as possible, depriving the operation of all its advantages—in the first place, by rendering it complicated instead of extremely simple; secondly, by making the stump too long; thirdly, by impairing its constitution; fourthly, by retaining a portion of the osseous tissue justly liable to the suspicion of relapse; and fifthly, by not being applicable to all cases requiring amputation at the ankle. On these grounds I have been accustomed to regard the adoption of this modification as a certain sign of lax surgical principle.

In performing the operation, the foot being held at a right angle to the leg, the point of a common straight bistoury should be introduced immediately below the fibula, at the centre of its malleolar projection, and then carried across the integuments of the sole in a straight line to the same level on the opposite side. The operator having next placed the fingers of his left hand

upon the heel, and inserted the point of his thumb into the incision, pushes in the knife with its blade parallel to the bone, and cuts close to the osseous surface, at the same time pressing the flap backwards until the tuberosity is fairly turned, when, joining the two extremities of the first incision by a transverse one across the instep, he opens the joint, and carrying his knife downwards on each side of the astragalus, divides the lateral ligaments, so as to complete the disarticulation. Lastly, the knife is drawn round the extremities of the tibia and fibula, so as to expose them sufficiently for being grasped in the hand and removed by the saw. After the vessels have been tied, and before the edges of the wound are stitched together, an opening should be made through the posterior part of the flap, where it is thinnest, to afford a dependant drain for the matter, as there must always be too much blood retained in the cavity to permit of union by the first intention. The dressings should be of the lightest description.

The advantages of this operation are, in the first place, its facility and simplicity, requiring no

tourniquet, and being completed, so far as the disarticulation is concerned, without any hurry, in less than a minute ; secondly, its not implicating any large blood-vessels or nerves so as to expose the patient to the risk of suffering from hemorrhage or nervous pains ; thirdly, its protection against the chance of exfoliation by the spongy nature of the bone divided ; and fourthly, its affording a stump so perfect as to give the requisite support without any extraneous assistance. No other stump of the lower extremity can bear pressure on its face sufficiently for supporting the body but the one in question, or at least be so used without inconvenience ; and there was a man lately at the hospital, who, after having both of his feet amputated, could not only stand, but walk and run without aid of any kind whatever.

CASE I.

P. C., aged 33, was admitted into the hospital on the 25th of July 1860, in the following state:—
He had been treated in the Manchester Infirmary for popliteal aneurism by pressure so decidedly

applied that it had caused an ulcer, of which the cicatrix remained, but without producing the effect desired. The femoral artery was then tied with success, in so far as the aneurism was concerned, but with the unpleasant sequel, some months afterwards, of mortification in the foot, which was thrown off with exception of the astragalus and os calcis, with their integuments—a large raw surface being presented in front where the bone was bare. Although the patient was extremely weak, and the parts concerned might be supposed more than usually disposed to slough, I did not hesitate to perform the operation, with the speedy result of a most excellent stump, and complete restoration of health.

CASE II.

E. M. aged 7, was admitted on the 28th of November last, labouring under a very large tumour of the os calcis. In this case, which would have rather perplexed the imitators of M. Pirogoff, I performed amputation at the ankle with perfect success in the ordinary way.

EXCISION OF THE ELBOW-JOINT.

It would be useless at present to expatiate upon the advantages of cutting out the elbow-joint over amputation of the arm. During a long period I advocated the former operation with hardly any support, and combated all the objections brought against it, which not unfrequently assumed the acrimony of personal feeling. But for many years this procedure has been established as the rule of practice, and the only room now left for discussion on the subject is limited to the mode of performance, the degree of motion attainable, and the nature of the uniting medium that supplies the place of the articulation.

An account of fourteen cases in which I had performed the operation was published in the year 1831; and since then, having annually repeated it from four or five to eight or ten times, I have had ample opportunity of making myself fully acquainted with the point just mentioned. The H shaped incision I still regard as most convenient for the purpose, since it not only affords

fection of the sphincter, are supposed to admit of only the palliation afforded by mechanical support. With the possession of such a perfect means of remedy as that afforded by the ligature, it is melancholy to reflect on the amount of misery thus so unnecessarily endured, as may be illustrated by the following case:—A most respectable and well-known member of the medical profession in this city asked me to see a lady suffering from Prolapsus ani. Upon doing so I found merely some internal hemorrhoidal tumours, and removed them by ligatures with complete relief. The doctor, very much astonished at this result, told me that he had laboured under the same complaint for twenty years, and during the whole of this period endured the intolerable nuisance of a bandage as the only means of enabling him to undergo the fatigues of an active life. No time was lost in removing his infirmity, and although several years have elapsed since this was done, I am happy to say he still enjoys the most perfect health. That a man of intelligence, who has written much for the medical instruction of others,

of mobility, and also the power of controlling it. For if too little is taken away, there will be more or less complete ankylosis; and if too much, such a relaxation of the muscles as must prevent their efficient action. In order to eradicate all the diseased or carious portions of the bone, it would very seldom be necessary to remove more than the articulating surface. But if limited to this extent, the operation would prove a failure in respect to mobility; while, on the other hand, if the humerus were shortened three or four inches, as in the solitary case of Sir P. Crampton, a very long time would be required for the muscles regaining their motive power. As a general rule, I should say that the section ought to be about the commencement of the condyloid projections of the humerus, and at the base of the coronoid process of the ulna.

As to the uniting medium, it might be expected, from analogy with what happens in fractures when there is no osseous union, that the medium of connection between the bones would be of a ligamentous nature, not imitating a joint, but

simply binding the two surfaces together ; and such accordingly is the condition that has been



found in the cases which have come under observation. Of these the most remarkable is here represented. It was taken from a man who, after suffering excision of the right elbow-joint in the hospital here, during nine years acted as a guard on the Edinburgh and Glasgow Railway, swinging himself off and on the carriages, and discharging all

the active duties of that most energetic employment, to the entire satisfaction of his employers. It will be seen that there are several ligaments extending between the bones, and that at their points of attachment there has been a remarkable production of new osseous substance, so as in some measure to supply the place and represent the form of the portion removed.

In illustration of what has been said, it would

be useless to relate any recent cases, since a considerable length of time is required before the result can be fully ascertained. But it may be of some service to notice the condition of some former patients who happened to present themselves during the current course, in grateful expression of the benefit they had derived from the operation.

CASE I.

J. G., aged 23, called at the hospital on the 13th of May last, to shew himself. He states that twelve years ago I had cut out his right elbow-joint for disease of the bone. For some years of late he had been the principal steward of a large Atlantic steamboat, and there discharged his multifarious duties so perfectly, that during a voyage to the West Indies and back again, his captain had not discovered his arm to be in any respect different from a sound one, which indeed it was not, with regard to the most complete flexibility, extensibility, rotation, and strength, though of course somewhat shortened.

CASE II.

W. R., aged 14, called at the hospital on the 7th of May last, to shew his right arm, of which I had cut out the elbow-joint about a year before, on account of ankylosis, following an injury. The limb was perfectly sound and strong, admitting of every movement, as if nothing had been done to it.

CASE III.

E. M., aged 22, had her elbow-joint cut out about two years ago. She is now the sole servant of an invalid old gentleman, and not only does all the work of his house, but also acts as nurse in very difficult circumstances. The arm is so perfect, that no defect can be detected in it.

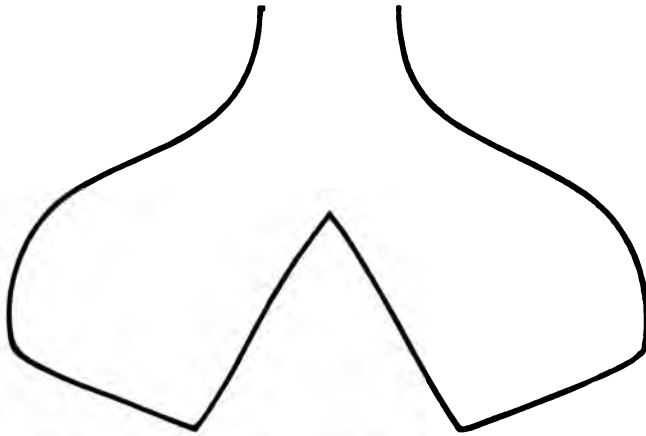
RESTORATION OF THE NOSE.

There certainly is no feature which, by its removal, so completely disfigures the human coun-

tenance as the nose, and its restoration has accordingly long been regarded as an important object of surgery. Of the plans proposed for this purpose, the wild scheme of Taliacotius need not be taken into consideration ; and the Indian or frontal method, which is the only other recognized by most surgical writers, has always seemed to me very objectionable, not merely on account of its deforming the forehead, but from its placing upon the face an unseemly appendage having little resemblance to a nose by its colour, consistence, form, or composition, and from being necessarily tucked up between the eyes above the proper level of its root. The nose thus constructed must also have its sensations in correspondence with the part from which it was derived, and consequently forms a constant source of annoyance to the patient, who finds that he has exchanged a negative for a positive evil. Instead of so questionable a substitute, I think a truly artificial one greatly preferable. It may be composed of silver or gutta-percha, and being secured in its place by spectacles or slips of some adhesive

tissue, enables the patient to go into society with a considerable degree of comfort.

About fifteen years ago, it occurred to me that surgical relief might be effected in such a way as to obviate the objections above stated with regard to the operations previously in use, and the method then suggested, when tried in practice, was found to surpass my most sanguine expectations. It consisted in making the flaps of skin from the cheeks, of this form,



uniting them in the middle by three or four sutures, and then fixing the outer edges on each side to the raw surface at a proper distance from

the nasal orifice. The wounds of the cheek admit of being nearly closed by a stitch through the edges of each, and what remains of them is of use by the contraction of the granulating process depressing the hollow at the side of the nose, and thus increasing its apparent elevation. The cavity should be gently distended with lint, compresses of the same being applied on each side externally, and supported by the blades of a small pair of forceps, applied so as to embrace the nose longitudinally.

A. S., aged 18, recommended to my care by Dr. Johnston of Montrose, was admitted on the 13th of December last, for the restoration of her nose, which had been destroyed by disease in childhood, so completely that it presented no projection when viewed in profile, the bone having suffered as well as the cartilage.

On the 15th I constructed a new nose from the cheek in the way that has been described. On the 31st of January she was dismissed, with the result here represented, from a

photographic likeness. Since her return home,



Dr. Johnston tells me that the new feature has become still more natural in its appearance.

RESTORATION OF THE LOWER LIP.



Although absence of the nose may occasion a more unseemly disfigurement, it would appear that removal of the lower lip gives rise to greater and more complicated inconvenience, by impeding

articulation and mastication, by allowing the saliva to dribble incessantly, by withdrawing support from the teeth, which are consequently pressed outwards by the tongue, and by exposing them to cold, which causes painful sensations of the most distressing kind. To obviate these effects the patient is obliged to wear a compress and bandage, which must cause discomfort in other respects. It might, therefore, be expected that the surgical means of remedying this defect would have long ago been perfected, but even so lately as the last edition of Mr. Liston's "Practical Surgery," it will be found that the plan then in use was to twist round a triangular flap of skin from under the chin, so as to present the hair to the mouth, and entirely disfigure the patient, unless the distorted integument sloughed, which it was much more apt to do, than exist in such unfavourable circumstances.

Soon after devising the process for restoration of the nose, I thought of applying the same principle to supplying deficiency of the entire lower lip, and since then in numerous cases have met

with the most satisfactory results. Indeed it would be difficult to mention any surgical operation that affords a greater amount of relief at a smaller expense of suffering. Nevertheless, and although the operating theatre of Edinburgh has year after year borne witness to the advantages of this procedure, the compilers of systems have treated it with cold indifference, either maintaining silence in regard to the proposal, or mentioning it with such faint praise as must tend to deter from rather than encourage to its adoption.

The principle of this operation is to leave the central or prominent part of the chin undisturbed, and to form two lateral flaps, which being detached from their subjacent connections, and raised to a proper level, supply the defect, while the whole extent of incision admits of healing by the first intention, so that the patient has sometimes been able to shew himself within a week after having the lip restored. In performing the operation, two incisions should be made from the centre of the gap in a straight direction outwards and

downwards in this form  to the extent of rather more than an inch, and from each of the lower ends the knife is curved outwards and upwards in a curved line sufficiently far to complete the flaps of this shape  which are then raised so that the two straight portions formed in the first instance meet together in the middle line, where they are united by sutures, which also maintain all the other cut edges in contact, while the prominence of the chin, retaining its natural connections, serves as a support for the new lip.

R. B., aged 62, recommended to my care by Dr. Anderson of Selkirk, was admitted on the 9th of November last, on account of an epithelial cancer, including the whole of the lower lip.

On the 21st, I removed the whole of the disease by two incisions from the angles of the mouth, to the prominence of the chin, and from this point cut on each side, at first downwards and outward in a straight line, and then in a curved direction outwards and upwards, so as to free the flaps, which were detached, raised, and united in their proper position by silver sutures;

the whole extent of incision healed by the first intention, and the patient was dismissed on the 7th of December. Since his return home, Dr.



Anderson has kindly sent me the photographic likeness, which is here represented.

SPASMODIC STRICTURE AND FISSURE OF
THE ANUS.

The expressions "muscular contraction and ulcer of the anus," would more correctly denote

the conditions to which the titles above mentioned have been applied, since the tightness is not variable or fitful, and yields to a mode of treatment that proves ineffectual when employed for the spasmodic affections of other parts, while under fissure cannot well be included a form of the disease, by no means rare, in which the sore is seated entirely within the sphincter. M. Boyer, to whom we are indebted for the first systematic account of both the derangements in question, described them as almost always existing together, the contraction being seldom, and the ulceration never found alone. He therefore concluded that the former was probably the primary, and, at all events, the dominating disease, and felt confirmed in this opinion, by observing that whenever the contraction was removed, the ulcer healed. His treatment, consequently, was directed to the muscle, and consisted in freely dividing it by a free incision throughout the whole of its extent. This was a formidable procedure, and required in general six weeks or two months for recovery, but nevertheless, from proving effectual, appeared fully war-

ranted by the severity of the patient's suffering, and thus became the established rule of practice.

At an early period of my own experience, I ascertained that a complete division of the sphincter was not requisite for the purpose, and found that it was hardly necessary to extend the incision beyond the mucous membrane of the bowel, or a few of the tense muscular fibres adjoining the base of the ulcer. The best way of accomplishing this, is to introduce the finger, so as to feel the fissure, or internal ulcer distinctly, and then applying the point of a small straight or curved bistoury at the margin of the anus, to push the knife upwards, with its edge directed inward, until it passes through the whole extent of the disease, and converts the sore into an incision. The cut thus made is very small, and requires no dressing beyond the introduction of a piece of lint, which may be allowed to remain until the bowel is evacuated. If there is much contraction along with the fissure, or if it exists independently of this complication, the same procedure should be adopted, with the difference of introducing the point of the knife

beyond the ring of constricted fibres, felt by the finger, that has been placed in the rectum. For this purpose, it is never necessary to commence the incision further than an inch from the anus, so that in no case need it exceed a very limited extent, or such as to require any subsequent treatment in the way of dressing.

The credit of this improvement, although, so far as I know, not claimed by any other person, has been erroneously attributed to various sources of long posterior date to the time when I first taught and practised it. The following letter from Dr. Duncan, late Senior Ordinary Surgeon of the Royal Infirmary, who attended my clinical lectures in 1832, will, I trust, afford conclusive evidence of the priority in question.

12 *Heriot Row*, June 11, 1861.

MY DEAR MR. SYME.—At your request I put in writing what I stated to you as to your teaching on fissure of the anus when I was your pupil at Minto House Hospital.

You then taught that it was unnecessary to

divide the whole sphincter, that the incision should be very limited, and that in fact all that was necessary was to convert the fissure into a simple incision. I have notes on the subject, although I cannot at present lay my hands on them, but my recollection of the matter is clear.—Yours, &c.

JAMES DUNCAN.

The following case of a much-respected member of the profession will shew that my practice continued to be the same at a later date, though still long before the period at which this mode of procedure has been supposed to have originated :—

Dr. A. of A. to Mr. SYME.

Although it is now upwards of twenty years since you operated upon me for fissure of the anus (if the trifling incision you made can be called an operation), I have a distinct recollection of the circumstances of my case.

I had been ill for many months before putting myself into your hands. During most of that time I had suffered intensely, so much so that I

became unfit for anything. I could not attend to my work, for I could neither think nor sleep. It was particularly unpleasant for me to be in society, on account of my extreme *unrest*. I was constantly fidgeting about, and sitting with one hip on my chair. That was the posture that afforded me most relief during the day ; and, at night, my only chance to sleep was afforded by separating the *nates* forcibly with my hands, as if trying to keep the anus open—the sphincter being all the time forcibly contracted, so that scarcely a vestige of the anus could be seen. I remember one thing particularly which I have not seen stated by writers on fissure, namely, that the pain always appeared to me to be higher up in the rectum than the seat of the fissure, which you found just within the anus. My suffering at stool, too, was greater than that generally described. Although I can bear pain as well as most people, the perspiration used to burst out upon me when at stool. The pain at that time was pure lancinating pain, which soon became, as it were, mixed with intense itching, in which state it continued for hours after

every evacuation of the bowels ; and if after that my suffering abated a little, it was *only* a little, for I was always miserable.

You at once detected the cause of my misery, and cured it as if by magic. Of course, I could not see what you did, but, so far as I can recollect, you said that you only divided a little bit of the mucous membrane and the subjacent cellular tissue in the line of the fissure, so as to convert the fissure into a simple incision. Little or no pain attended the small operation. Indeed, the sensation caused by the knife was comparatively pleasant. You then introduced a small piece of lint into the wound, and advised me to endeavour to refrain from going to stool for two days, and after that to take a dose of castor oil. The cure was instantaneous and complete. I never felt the pain again. The castor oil, which I took according to order, operated freely, after I had enjoyed two nights of sound sleep, to which I had long been a stranger. I returned home about the third day after the operation ; and, although I had to cross the Frith of Forth in a gale of wind, and then

to travel fifty miles, I felt no inconvenience, but was able to return to my work immediately on my arrival.

D. A.

FISTULA IN ANO.

The surgical history of fistula in ano is both curious and instructive. In old times, when the characteristic obstinacy of this disease was attributed to some peculiar condition of the morbid surface, it seemed requisite to destroy or remove the lining membrane throughout its whole extent by caustics or excision. Even now there is reason to believe that this severe treatment has not yet been universally abandoned, since, at no distant date, the scooping out of a fistula might still be witnessed in the metropolitan hospitals of a neighbouring country, and there was very recently under my care a gentleman who came from Sweden to obtain relief from a complaint of the kind in question, which, he told me, had resisted twenty applications of the chloride of zinc. In this country a better system was long ago introduced through the clear and forcible exposition of Mr.

Pott, who explained, that the difficulty of healing proceeded not from any peculiarity of vital action in the texture, but from the mechanical obstacle presented by the thin septum that lay between the fistula and bowel, of which the simple division was sufficient to insure recovery.

The principle of treatment thus established, though greatly superior to the old practice, was far from being perfect, since it required that the septum should be divided throughout the whole of its extent, which could not be done without considerable pain and trouble, the risk of hæmorrhage, and a tedious recovery,—with careful dressing of the wound to prevent its edges from adhering prematurely. But in 1820, M. Ribes made known a most important observation, which led to a great improvement of practice. This was, that the internal aperture of a fistula, instead of being variable in its position, as had been supposed, is always situated within an inch, or very little more, from the anus, and that division of the septum merely to this extent may be regarded as an effectual remedy. It must be admitted, that along with these valuable

contributions to pathology and practice, M. Ribes conveyed two very serious errors—by maintaining that the internal opening was always present, and that it was formed, in the first instance, by ulceration of the mucous membrane, so as to produce an abscess, by allowing the escape of intestinal matters into the cellular texture. That both of these positions are untenable, may be proved beyond the possibility of question, by examining the cavity of an abscess which gives rise to fistula soon after it has opened externally spontaneously, or been evacuated by incision. It will then be found, by inserting a finger into the rectum and a probe into the sinus, that the mucous membrane, though to more or less extent denuded and extremely thin, is at that period *always quite entire*.

Having had my attention directed to the observations of M. Ribes soon after their publication, and ascertained the accuracy of his statements in regard to the position of the internal orifice, and the efficacy of a limited incision, I was surprised to find his views so inconsistent in other respects with matters of fact admitting of such

easy recognition ; but could not doubt, that with the exception of some rare cases in which the abscess opened primarily into the bowel, the aperture in the mucous membrane was always of secondary formation, through ulceration taking place subsequently to evacuation. It may be added that the nature of the matter contained in the abscess, which is usually small in quantity, and simply purulent, cannot be reconciled with the idea of M. Ribes, or the similar view more lately expressed by Sir B. Brodie (1844), that the first step is ulceration allowing the escape of intestinal contents ; since the result of such an occurrence would certainly be a great accumulation of fetid matters, gaseous as well as liquid, and totally different from what is found when the abscess is opened. But any such argument is quite unnecessary in the treatment of a question admitting so easily of positive demonstration.

From three to six weeks may be considered the usual length of time required for the establishment of an internal aperture, although a longer

period occasionally elapses before its production, especially when the abscess has been opened by a free incision, as the confinement of discharge, that probably gives rise to absorption of the septum, will then, of course, be more slowly induced. From this observation, the practical inference follows, that in operating upon a patient who has no internal opening, it is merely necessary to divide the septum up to that thin portion of the mucous membrane where the aperture would be if there were one.

In performing the operation a considerable difficulty is frequently experienced in detecting the internal orifice, from its not lying in the same line with the external one. I think the best plan is to bend the probe, after being passed through the opening into the bowel, and bring its point out at the anus, when the single stroke of a sharp knife is sufficient for its extrication. A piece of lint is then placed in the wound, and allowed to remain two days ; after which no precaution or treatment of any sort is required beyond ascertaining once or twice, by passing a finger or the probe

into the wound, that it is healing by contraction and not adhesion.

Although the operation, when thus performed, may be regarded as the perfection of simplicity and efficiency, it does not seem to afford any security from the foolish proposals of would-be-improvers, as will appear from the following example :—Not long ago a gentleman came to me from one of the largest towns in England for the remedy of a fistula in ano, on account of which he had suffered much pain and useless confinement, through the representations of a practitioner who described the operation as too dreadful for human endurance, and held forth the injection of iodine as an effectual substitute for it. This fistula, being of the slightest and simplest kind, was remedied by an incision so trivial that the patient was not aware of its performance, and could with difficulty be made to believe that the process was completed ; while instead of the protracted stay in Edinburgh, to which he and his wife had made up their minds, he returned home at the end of four days, so well satisfied with his

expedition that he soon afterwards recommended to my care a friend similarly afflicted.

INTERNAL HEMORRHOIDS AND PROLAPSUS ANI.

So lately as thirty years ago the treatment of internal hemorrhoids was feeble and uncertain, few practitioners venturing to interfere with them, and never doing so but under a painful feeling of anxiety. Sir A. Cooper, in his lectures, relates various cases of death from hemorrhage caused by excision of the tumours, and speaks of tying them as hardly less free from danger ; so that, with the fear of bleeding on the one hand, and of inflammation on the other, both the scissors and the ligature were equally dreaded. My attention having been directed to the subject, while it was in this unsatisfactory state, I found that the bad effects which had been attributed to the ligature proceeded from the faulty mode of its application, and was more especially due to the erroneous practice of neither including the whole of the

morbid growths, nor tying them so tightly as to insulate them from all communication with the living tissue. Both of these errors originated from the desire of lessening pain and protecting the patient from the effects of excessive irritation, but were in truth completely opposed to the objects in view. For the tumours allowed to remain were apt to inflame, while the portions of them that had been merely strangled necessarily did so, in consequence of the obstructed circulation. The application of a ligature, says Sir A. Cooper, "is exceedingly painful if it be drawn tightly;" and so said Sir Charles Bell, with other surgeons of eminence. To the directly opposite conclusion I was led by observing the very different effects of partial and complete strangulation on the same patient, and therefore adopted the principle of so far as possible including every part of the hemorrhoidal enlargement in the ligatures, and drawing them with the utmost practicable degree of tightness. The process is thus rendered either entirely free from pain, or attended by such a slight degree of it as easily admits of being coun-

teracted by small opiates. I have repeatedly had under my care patients who, having been imperfectly relieved by the old-fashioned mode of ligation were with great difficulty induced to submit again to what their former experience led them to suppose would be extremely painful; but who were agreeably disappointed on finding that it could be so conducted as not to occasion any suffering worthy of mention.

When the facility, efficiency, and safety of this method are considered, it seems surprising that any other means of treatment should still be entertained. Yet there can be no doubt that many practitioners are in the dangerous condition of hesitating between the use of caustics and excision, both of which are apt to prove fatal by inducing inflammation of the mucous membrane or veins.

When internal hemorrhoids are protruded from the anus, not only during evacuation of the bowels, but through ordinary exertions in the erect posture, they generally receive the appellation of "Prolapsus ani," and being attributed to imper-

fection of the sphincter, are supposed to admit of only the palliation afforded by mechanical support. With the possession of such a perfect means of remedy as that afforded by the ligature, it is melancholy to reflect on the amount of misery thus so unnecessarily endured, as may be illustrated by the following case:—A most respectable and well-known member of the medical profession in this city asked me to see a lady suffering from Prolapsus ani. Upon doing so I found merely some internal hemorrhoidal tumours, and removed them by ligatures with complete relief. The doctor, very much astonished at this result, told me that he had laboured under the same complaint for twenty years, and during the whole of this period endured the intolerable nuisance of a bandage as the only means of enabling him to undergo the fatigues of an active life. No time was lost in removing his infirmity, and although several years have elapsed since this was done, I am happy to say he still enjoys the most perfect health. That a man of intelligence, who has written much for the medical instruction of others,

should have made such a mistake, shews how strong is the tendency to it ; but the best measure of its frequency may be gathered from the advertisements of mechanical support for the relief of prolapsus, which may be seen in every newspaper and every medical print. It is thus rendered evident that there must be an extensive demand for these machines, of which it may be said with certainty that at least 99 in the 100 are employed under an entire misapprehension of the case ; and in the belief that the complaint is incurable, while, on the contrary, it admits of easy, safe, and effectual remedy.

HEMORRHAGE FROM THE RECTUM.

Internal hemorrhoids are so generally the source of bleeding from the rectum, that hardly any others appear to have been noticed by writers on the subject. But having frequently met with the most profuse and obstinate hemorrhage, when there was not the slightest trace of internal piles, I think it is very important that attention should

be directed to the morbid states of a different kind, which may give rise to this occurrence. Of these, the one most frequently concerned is that of external hemorrhoids.

That pendulous flaps of skin hanging round the anus should give rise to a serious flow of blood, seems in the highest degree improbable, and might indeed be deemed altogether incredible, were it not proved beyond the possibility of question, by well ascertained facts. It is now more than thirty years since I became aware that external piles, independently of any other morbid condition, might be the cause of bleeding, through the observation of a case in which, although the patient had been rendered almost exsanguine, the most careful examination failed to detect any other derangement, and complete relief was afforded by its removal. Since then, both in public and private practice, I have had very many opportunities of observing similar facts, and of these may select the two following as sufficiently illustrative for the purpose :—

Mr. CRAIG of Ratho to Mr. SYME.

MY DEAR SIR—The operation performed on Mr. D. in July 1845 was most successful. He was then 47 years of age, and looked quite anæmic, having for many weeks lost a large quantity of blood at stool ; the amount had daily increased, but the most careful examination of the anus and rectum revealed nothing more than a quantity of loose skin external to the orifice. When he sat upon the stool in our presence, pure blood to the amount of several ounces was speedily discharged, and formed a cake of coagulum in the utensil. You merely removed the whole of the loose skin by scissors, saying that you had reason to believe this would prove sufficient, and the result was a complete and permanent cure, as the patient never passed any more blood, and is still in good health.—Yours, &c.

JAMES CRAIG.

Ratho, 1861.

Dr. PATERSON to Mr. SYME.

MY DEAR MR. SYME—The Rev. Mr. —— laboured under large and exhausting discharges of blood from the rectum, which had been going on for years. As there were some external hemorrhoids, you considered that these were most likely the cause of the hemorrhage. They were accordingly removed, since when there has been no bleeding whatever ; and nearly six months have now elapsed since the operation.—Yours, etc.

ROBT. PATERSON.

Leith, 31st May 1861.

How the presence of external piles causes bleeding from the bowel, or how their removal prevents it, I am quite unable to explain ; but do not, on this account, regard these facts as of less importance in practice. If their occurrence were extremely rare, they would be of less consequence, but happening so frequently, as I have had occasion to see, their recognition is obviously a matter of no small practical importance.

Another source of hemorrhage from the rectum, which could not have been readily suspected or anticipated, is spasmodic stricture of the anus. The fissures and ulcers which are so frequently connected with this condition usually discharge a little blood, although hardly in such quantity as to constitute a prominent feature of the case; but, independently of any such complication, a mere contracted state of the sphincter may occasion the most profuse and serious bleeding. As an instance of this effect, I may mention a very remarkable case that was presented to me, not long ago, by a medical student of great talent and diligence. He complained of bleeding at stool, but, on examination, was found so perfectly free from hemorrhoidal disease, that I supposed he must labour under a delusion. Some time afterwards, remarking that he had become extremely pale and emaciated, I was led to make further inquiry, and then learned from a companion who resided in the same house with him, that there really was a copious discharge of blood, which issued in a fluid state, and then coagulated. On

making another examination, I found that the external part of the sphincter was tightly contracted, and knowing that this might be the cause of bleeding, made a division of the tight muscular fibres. No blood was subsequently discharged, and the patient soon regained his healthy aspect.

There is still another source of hemorrhage from the rectum, of which I have met with only one example. The patient was a young lady whom I saw along with the late Dr. Graham, the professor of botany. She had lost so much blood as to excite attention by her altered appearance, and was brought from the country in quest of relief. I could not detect any hemorrhoidal disease, or any other recognised derangement; but observed, that when expulsive efforts were made, the blood issued from a small round orifice, apparently seated in a varicose vein. To this point I applied a ligature, with the effect of affording complete relief.

THE ACTUAL CAUTERY.

The extraordinary, and apparently almost magical effect, which, in certain forms of articular disease, is produced by the actual cautery, renders it one of the most valuable curative means employed in the practice of surgery. Yet little more than thirty years have elapsed since this powerful agent was first employed in Great Britain for the purpose of counter-irritation. I was then induced to adopt it by the recommendation of the late Professor Rust of Berlin, in his work on "Arthrokakologie," and have since taken every opportunity of inculcating the advantage derived from its employment. For many years these efforts produced little effect, and the proposal was even not seldom scouted, as no less shocking to humanity than degrading to the profession. In illustration of the feeling at that time entertained on the subject, I may mention a circumstance which was lately recalled to my recollection by an old pupil, now occupying a distinguished position in

the military service of her Majesty. A young man from the country, labouring under that unusual form of disease in the hip-joint which is amenable to the cautery, had had it applied with great relief to his sufferings; but after going home, in consequence of feeling some return of the symptoms, desired a repetition of the remedy, and applied for it in vain to all the neighbouring practitioners, who replied to his request with an indignant refusal. At length, driven to despair, he resorted to the remarkable expedient of sitting down upon a red-hot poker.

Through the gradual influence of time, and the incontrovertible evidence of experience, this prejudice at length gave way, and allowed the cautery to get into fashion, which proved still more dangerous to its character; for, being employed without due discrimination of cases, and too frequently with a reckless disregard of propriety in the mode of application, it was found to afford more disappointment than satisfaction, so that at present the ideas entertained on the subject are very uncertain and conflicting. It is therefore

desirable, that the morbid condition which is really suitable for the treatment in question should be distinctly understood.

Ulceration of the cartilages is a title that may be objectionable on the score of pathological accuracy, but at all events, has the recommendation of having been long established and recognized as denoting a condition of articular disease characterized by very distinct features. These are—intense pain, aggravated by pressure or motion, and most severe during the night, not confined to the joint affected, and being generally also referred to the one beyond it, or a more distant part of the limb, which is weakened in its muscular power, disposed to oedematous effusion, and altered in its sensations, being usually hotter or colder than natural, and occasionally feeling as if benumbed. These symptoms may exist for weeks or months with little alteration except in regard to their degree of severity; but if the derangement from which they proceed be allowed to pursue its course without interruption, are almost sure, sooner or later, to terminate in ankylosis or suppuration, with caries

of the bones affected. It is in this case that the actual cautery, if properly applied before suppuration has taken place, may be regarded as very nearly, if not absolutely, a certain remedy.

It is not always easy to ascertain whether or no the patient still admits of relief, as the swelling, though seldom diffused, and in general limited to the immediate vicinity of the joint, usually possesses that soft semifluctuating condition which is apt to simulate the presence of a fluid. But wherever a careful examination leaves any room for doubt, it will of course be prudent to run the risk of erring on the safe side, and use the means that promise to be effectual, unless they have been too long delayed. The cautery should be heated to the utmost degree producible by a common fire, and be in size not less than a pigeon's egg, in order to retain its temperature sufficiently. In cases of emergency I have not scrupled to use an Italian iron supplied by the laundress, or even a common poker. The eschar may in general be about two inches in length, and should be made on each of the two sides where the articulation is nearest the

surface. The pain is much less than might be anticipated, and may be readily prevented through means of chloroform, which, for this purpose, need not be employed so as to produce its full effect, since the early stage of unconsciousness will protect the patient from any unpleasant recollections of the procedure. A poultice should be applied until suppuration is established, and then some unctuous application, unless it is desired to check or stop the discharge, when the water dressing may be substituted.

ŒSOPHAGOTOMY.

CASE I.

M. C., aged 45, was admitted into the hospital on the 22d of July 1861. She stated that six days before the time of her application, while eating mutton broth, she had suddenly felt inability to swallow, together with severe pain, from which she concluded that a piece of bone had stuck in her throat. Under this impression

she had applied for assistance, and been treated by the introduction of probangs or other instruments, without success, so that her distress remained unrelieved, and became complicated with fits of dyspnœa, which repeatedly threatened to prove fatal. On examination I found her in the state described, with a very anxious expression of countenance, and slight general fulness of the neck, which was not discoloured or otherwise altered, but felt somewhat tender under pressure. Having introduced the long curved forceps, without being able to touch the foreign body, but feeling satisfied, from the circumstances just mentioned, that there was one present; and fearing, that if allowed to remain, it would cause suppuration, if indeed it had not already done so, I considered it necessary to adopt the only effectual mode of affording relief, by performing the operation of cesophagotomy.

With this view, having administered chloroform, I made an incision as if for ligature of the carotid artery, exposed the edges of the sterno-mastoid and sterno-thyroid muscles, and then

opened the deep fascia of the neck, from under which a small quantity of purulent matter escaped. Introducing my finger through the narrow passage thus detected, I carried it upwards and backwards to the posterior part of the gullet, where a piece of bone was felt protruding from the canal. The requisite dilatation having been made, I guided in a pair of polypus forceps, and extracted a piece of mutton bone, extremely thin, but nearly an inch square.

The operation was performed on a Thursday, and on Friday the patient seemed to be doing well ; but on Sunday I was told that she had become delirious on Saturday, and appeared to be sinking. Upon visiting her I found the hands blue and perfectly cold, with the faintest possible thrill instead of a pulse, so that the case had certainly a most hopeless aspect. It occurred to me, however, that the symptoms might possibly proceed from hunger, as the patient, during a whole week, had not been able to swallow at all, and since the bone was removed had done so very imperfectly, from the milk and other fluids given to

her escaping in great part by the wound ; I therefore, by means of a catheter, introduced from the mouth into the oesophagus, immediately injected some beef tea, with wine. In the course of half an hour there was, in all respects, a decided improvement, which, through a continued employment of the same means, repeated regularly at proper intervals, gradually increased until recovery was completed at the end of a fortnight.

CASE II.

J. M'G., aged 26, from Aberfeldy, was admitted into the hospital on the 28th of August 1855. He stated that on the 12th of the same month, while eating rabbit soup, he felt a piece of bone stick in his throat, and since then had been unable to swallow anything that was not fluid. The surgeon who was called to see him had administered an emetic, searched the pharynx, and passed a whalebone probang without affording any relief. Since then he had not been able to lie down, and had little sleep ; his voice was husky

and his breathing difficult ; pulse 100, and the neck somewhat swelled.

Next day I dissected through the integuments and muscles, opened a deep-seated abscess, and extracted a portion of the rabbit's rib about an inch in length. The patient was immediately relieved from the severity of his sufferings, but remained in a state of considerable disorder for several days, though able to swallow fluids, of which a part escaped by the wound. At the end of a week he was convalescent, and before the close of another quite well.

Cutting through the coats of a sound œsophagus for the removal of some foreign body lying within it is an operation that can hardly ever be required, since, before it is warranted, there will almost necessarily have elapsed such a period of time as must allow ulceration and suppuration to be induced by the intruder, compressed as it cannot fail to be by the surrounding muscular fibres. Any hard substance so situated therefore should be regarded with much apprehen-

sion, since, especially if urged in a wrong direction by the use of probangs, it must expose the patient to extreme danger, not merely from the effusion of matter behind the larynx, but from ulceration extending to the air passages or blood vessels. It is therefore of great consequence to prevent the risk of such consequences by timely removal of the foreign body when it is ascertained to be present.

The instruments in common use for this purpose, which are the probang and curved forceps, with blades opening in a vertical direction, may be regarded as worse than useless, since the foreign body, if arrested by its form, will not yield to the former instrument, while simple inspection of the latter will shew that expansion of the blades must prevent the possibility of their seizing any thing whatever. Instead of these dangerous and useless implements, every practitioner should be provided with long curved forceps, having blades opening laterally. By their means he may safely apply pressure to any substances that admit of being pushed downwards, and will also be able to effect extraction if the case permits this. During

my residence in London I was asked by two medical gentlemen to see a shopkeeper in St. Martin's Lane who was in great distress from having swallowed an artificial tooth with its gold fastening, which had been arrested at the orifice of the œsophagus. I succeeded in removing it by the forceps with immediate and complete relief. Upon another occasion the late Dr. Malcolm of Perth requested me to visit a lady resident in the neighbourhood of that city, whose gullet was obstructed by a piece of food, and I used the same instrument, with the effect of affording instant relief, by pushing the soft substance downwards by my effort to extract it.

THE EXCISION OF ENLARGED TONSILS.

The excision, or, more correctly, the curtailment of enlarged tonsils, affords the instructive lesson of an operation perfected in the first instance, and subsequently impaired through alterations in the mode of its performance, proposed by

would-be improvers. All other means having failed to remove the swelling, it is the duty of the surgeon, says Celsus,—“*hamulo excipere et scalpello excidere.*” But, instead of following this simple and clear instruction, it appears that, until the latter part of last century, practitioners of surgery either abstained from interference with the disease, or attempted to subdue it by objectionable methods. Thus, we find Heister contriving complicated instruments for the purpose; Wiseman confessing that he had done much mischief by the use of caustics and cauteries; and Sharpe still more unfortunate through means of the ligature.

It is just a hundred years since M. Caquet of Rheims shewed, by ample experience, that the more closely the directions of Celsus were followed the better it would be for the patient; while his colleague, M. Museux, taking the same view, invented, for this particular purpose, the forceps which still bear his name, having each of their blades terminating in a double hook. With this instrument, or a simple hook and curved bistoury,

M. Caquet operated so frequently and successfully as to establish the operation in such confidence as might have been expected to prove general and lasting. In this country, however, it does not appear to have been recognized at all; and, so lately as 1812, we find Mr. Chevalier, in the *Med. Chirurg. Transactions of London*, describing a plan for facilitating the employment of ligatures as the only practicable means for the removal of redundant tonsils.

While house-surgeon of the Royal Infirmary, I had under my charge a young woman who had been admitted on another account, but also suffered from an enlarged tonsil. Being anxious to relieve her, and seeing strong objections to both cauteries and ligatures, I resolved to cut away the tumour, which was done with perfect facility and success. Supposing that this was a novel procedure, I felt not a little surprised, on going to Paris soon afterwards, to find that the late M. Lisfranc taught excision of the tonsils as a regular part of his operative surgical course, and precisely as M. Caquet had performed it. On my return I gave

the forceps of Museux to Mr. Liston, and he immediately began to operate upon all the cases requiring this treatment that came in his way, which were neither few nor rare, since the disease is very frequent in Scotland, especially the districts of Perthshire and Stirlingshire. The operation thus became established in Edinburgh, whence it must have been carried across the Tweed by many of the Englishmen who pursued their studies here, but does not appear to have found much favour in London until, at a comparatively recent period, it all at once came into fashion as a remedy for deafness, of which it is occasionally, but very seldom, the cause.

Since the operation thus became generally adopted, it appears that the simple and efficient means originally employed for its performance have been supplanted by others in every respect inferior, such as scissors and guillotines. Of these, the former are very objectionable on account of their inability to execute the section with certainty at one stroke, while it is difficult, or almost impossible to obtain an opportunity for a second,

from the blood trickling into the pharynx and causing the patient to cough. But the latter instrument is still more to be deprecated, since, besides being so difficult to manage in such a narrow inaccessible space, as to render its performance in most cases little better than a sham or pretence, it is also dangerous, for instead of drawing the tonsil inwards, and away from the carotid artery, so as to make its excision perfectly safe, as is done by the hook or forceps, it presses the gland outwards and closer to the vessel. It is therefore with no surprise that I have heard of a fatal hemorrhage from this source.

Fearing that, through the influence of these faulty means, a most useful operation may again fall into discredit, I beg to enter my protest against any deviation from the old rule of "*hamulo excipere et scalpello excidere.*" The best knife for this purpose is a probe-pointed curved bistoury, which, being applied with its convex or blunt edge upwards, and urged with a sawing motion of its blade downwards, easily and safely accomplishes the object in view.

UNION BY THE FIRST INTENTION.

IN the year 1826 I published a paper on the treatment of incised wounds, with the view of shewing that the method then employed in their treatment was much opposed to primary union. At that time the practice was to close the wound immediately after its infliction by straps of adhesive plaster, then to apply a pledget of ointment, and lastly to envelop the part concerned with a long bandage, which was not undone until the fourth day, in order that what was called the adhesive inflammation might subside before the first dressing. The imperfections of such a process will appear at once, when the steps by which the adhesion of cut surfaces is accomplished are taken into account.

John Hunter erroneously supposed that blood became organized so as to constitute the bond of union ; while in more recent times Mr. Paget has fallen into a mistake no less serious by denying that there is any uniting medium at all required.

The truth is, that after the bleeding has ceased, a discharge of serum and lymph or organisable matter takes place from the cut surfaces, which are then glued together, if sufficiently approximated, and retained in contact. This process, instead of requiring to be preceded by inflammation, is certainly subverted by it, so that heat, redness, and pain, may be regarded as evidence that adhesion will not be the result. But the old system of dressing by complete closure of the wound immediately after its infliction, prevented the discharge of both blood and serum, and thus allowed these fluids to accumulate so as to distend the cavity, and separate its surfaces beyond the limits of adhesion, whence inflammation was necessarily excited as the precursor of suppuration and granulation.

From what has been said, it must be obvious that the bleeding vessels of wounds which are desired to heal by the first intention, should be carefully secured, not merely for the prevention of injurious hemorrhage, but also to oppose the accumulation of blood in the cavity. The liga-

tures employed for this purpose afford the farther advantage of establishing a communication between the bottom and mouth of the wound, so as thus to provide a drain for the discharge of both sanguineous and serous effusion. It has been alleged on theoretical grounds that the threads employed for this purpose must cause irritation and otherwise impede the adhesive process; but any such apprehension is shewn to be groundless by the results of daily experience; and it cannot be denied that the obstacle so afforded is of infinitely less consequence than the presence of blood or other fluid, which has the effect of separating the raw surfaces. "Torsion" and less efficient means, such as thrusting needles through the textures, may be employed to close the bleeding vessels, but cannot prevent the oozing that still continues in a wound of any considerable size, so that while the orifice heals, the cavity is almost sure to become an abscess.

But notwithstanding the protection against deep-seated accumulation of blood which is derived from the ligatures, the old plan of closing

the wound immediately after its infliction was almost sure to defeat the object in view; and accordingly, within my recollection, it was no uncommon remark of students that during the whole period of their hospital attendance, they had never witnessed an instance of union by the first intention, except in wounds of the lip or cheek, where, there being both an external and an internal orifice, the edges of the former could be kept in contact without causing any retention of blood between the surfaces required to adhere. Whenever the wound possesses this condition, as when it opens into the mouth, the abdomen, a joint, the bladder, the vagina, or the rectum, the edges may be retained in accurate contact. But when, as more generally happens, there is only one orifice leading to a cavity in the subcutaneous texture, means must be employed to prevent the retention of blood or serum. At one time I thought that the best way of doing this was to keep the wound open for several hours before adjusting its edges; and I still believe that the object in view would be thus most certainly

accomplished, if the process could be performed without a renewal of the bleeding. On the whole, however, I feel satisfied that a better method of proceeding is to employ sutures at moderate intervals, to place some permeable material on the orifice, and to apply pressure over the cavity. For the two last-mentioned purposes there is nothing better than a sponge of adequate size, and for the first one the silver wire introduced into practice with so much advantage by Dr. Sims of New York, is greatly preferable to the silk threads previously employed. This improvement—for which, together with the great boon of *Ætherization* or anæsthetic respiration, we are indebted to our transatlantic brethren—has rendered the operation for vesico-vaginal fistula and similar derangements practicable, with a prospect of success that affords an agreeable contrast to the former hopelessness of such undertakings.

HYDROCELE.

CASE I.—SIMPLE HYDROCELE.

A. C., aged 61, was admitted into the hospital on account of a large hydrocele in the right tunica vaginalis, of two years' standing. It was immediately evacuated, and injected with tincture of iodine (3jj. Ed. Pharm.), which was allowed to remain, after being diffused over the whole surface by a rough shake of the scrotum. On the third day the subsequent swelling was at its height, on the fourth day it was diminishing. On the 7th day the patient was dismissed cured.

This case is selected, not from being of an exceptional character, but because it affords an example of the result which usually, or, as I should rather say, invariably attends the operation employed. In former times candidates for graduation at this University used frequently to choose hydrocele as the subject of a thesis, from the variety of opinions entertained in regard to its treatment, and the different procedures employed

for this purpose affording convenient materials for discussion. Thus, it was said that port wine, when injected, was apt to fail, and also to produce very serious consequences if it happened to enter the cellular texture of the scrotum—the operations of incision and excision were bloody and painful—the seton was no less tedious than irksome—and so on. But since the use of iodine has been introduced, the theses on hydrocele have gradually become fewer, until they entirely disappeared; whence I concluded, that the advantages of this means were so manifest, that they had led to the abandonment of all the others, and left no room for discussion. I was therefore accustomed to quote this unanimity of practice as an illustration of what might happen, if through time and careful observation all surgical derangements should come to be treated in accordance with the principles which judgment and experience had decided to be best for each. But the hopelessness of any such aspirations for the perfectability of surgery has been lately well shewn by a strenuous attempt to substitute for the treatment by injec-

tion with iodine, the old and justly abandoned procedure of seton, which it was proposed should consist of silver wire instead of the silk threads formerly employed. It is difficult to imagine that such an absurdity could be adopted by any surgeon of ordinary intelligence, and yet if the medical journals can be regarded as affording indications of professional opinion, it might for some time have appeared that a real improvement had been introduced, instead of a proposal implying the most lamentable lack of practical principle.

The injection of iodine, in order to be effectual, must be performed with attention to the following circumstances. In the first place, the patient should stand while the sac is tapped, in order to let the water be drained off completely. Then ʒij of the Edinburgh tincture of iodine, which is much stronger than that of the London Pharmacopœia, should be injected, unless the tumour is either very large or very small, when there may be a corresponding increase or diminution of the quantity employed. And lastly, a rough shake of the scrotum should diffuse the

CASE II.

M. M'L., 20 years of age, from Ross-shire, was admitted on the 23d of May 1853. He stated, that until the last two years his health had been perfectly good, but that, during this period, he had suffered from frequent and excessive bleeding at the nose, accompanied by a gradually increasing swelling of the right cheek, and obstruction of breathing, at first through the right nostril, and then through the left also, until both were completely obstructed. After suffering in this way about twelve months, he had repaired to the Infirmary at Glasgow, where his case appears to have been regarded as irremediable, since, although he had while there a very copious discharge of blood, no attempt was made to afford relief. He therefore returned home; and, as the hemorrhage became not only more frequent, but more severe, his state seemed entirely hopeless. But cherishing some idea of escape, the patient gathered together a little money for the purpose of coming to Edinburgh, which was regarded by his friends as so

ing to know the particulars which I deemed essential for success. I sent the directions above given, and before long was informed that the operation performed in accordance with them had proved completely successful.

It may be remarked, that this operation is applicable to all the forms of hydrocele, whether it be the ordinary one of water in the tunica vaginalis, or a collection of fluid in the spermatic cord, or that peculiar condition named Spermatocele, which has been commonly regarded as not amenable to injection.

CASE II.—HYDROCELE AND SPERMATOCELE.

J. D., aged 49, was admitted on the 27th of May 1861. Ten years ago he had had a hydrocele on the left side tapped and injected, but not effectually, as within the last two years fluid had again accumulated at the same part. Three years ago I had tapped and injected a hydrocele of the right side, which remained free from disease.

On more particular examination of the left

side it appeared that there were two swellings, one being a distension of the tunica vaginalis, and the other a round circumscribed tumour attached to the upper part of the testicle. The latter was readily recognised as a spermatocele, and found to be so when tapped ; but was injected with iodine at the same time as the other, and with equal success, so that the patient was dismissed cured on the 10th of June.

CASE III.—TRIPLE SPERMATOCELE.

T. N., aged 53, from Leadhills, recommended by Dr. Martin, was admitted on the 10th of April 1861, with a great enlargement of the scrotum, which on examination was found to depend upon three distinctly different collections of fluid, two being seated on the left and one on the right side. The patient stated that the swelling on the left side was about two years' standing, and had slowly increased without giving him much trouble, except by its bulk, while the other had commenced about a year ago, and enlarged more rapidly. It

had been tapped about five weeks before the date of admission, but not injected.

Not anticipating anything unusual, I proceeded to operate upon this case, and on tapping one of the collections was surprised to find that its contents presented the peculiar colourless-pellucid fluid indicative of the spermatozoa, which were accordingly detected in abundance by the microscope. Still more to my surprise, the other two swellings were found to possess the same constitution. All the three were injected at the same time, and with such success, that the patient went home on the 24th.

ABDOMINAL HYDROCELE.

On the 3d of June last, a child between four and five years of age, the son of a farmer in Berwickshire, was brought to me from the country, a distance of about fifty miles, labouring under what seemed to be an incarcerated, if not strangulated, inguinal hernia. It appeared that a rupture-bandage had been worn between two and three

years, but that the scrotal swelling suddenly enlarged, with great distension of the abdomen, so as to present a very alarming appearance ; although, with the exception of some tendency to constipation, there were no corresponding symptoms of any consequence.

At my clinical lecture I introduced this child, with the intention of dividing the tendinous ring at the lower end of the inguinal canal, in order to prevent the risk of injurious pressure ; but, after chloroform had been administered, and the muscles were relaxed, I remarked that the abdominal swelling, though very large and tense, like a uterus at the full period of gestation, extending high above the umbilicus and to a proportionate extent on each side of the cavity, still left a narrow space, in which the intestines seemed to possess their natural laxity. Upon this ground, coupled with the absence of symptoms denoting strangulation, I at once formed and expressed the opinion, that the case was not hernia but hydrocele.

Lest this view, however, should not be correct, instead of puncturing the scrotal swelling by

means of a trocar, I made a small incision through various layers of thickened texture, which shewed that the fluid was contained, not in the tunica vaginalis, but in an expansion of the cord; and evacuated a large quantity of serous effusion. Then, introducing my finger, I found that the state of matters was what had been suspected, although the abdominal part of the swelling remained unchanged. I accounted for this by attributing it to the effect of pressure by the bandage, and proposed after a while to puncture through the parietes of the abdomen. But, in the course of two or three days, the fluid began to drain away from the scrotal aperture, at first clear, and then slightly turbid with lymph—the child at the same time being slightly feverish—while the tumour gradually diminished. On the 24th of June he returned home, where, as I have learnt from his medical attendant, he was soon running about quite well.

HYDROCELE AND HÆMATOCELE OF THE
NECK.

Collections of serous and also of dark coffee-coloured fluid are not unfrequently met with in the neck and neighbouring parts of the chest, where they have received the same designations as those given to accumulations of a similar kind in the tunica vaginalis. Such tumours are sometimes connected with the thyroid gland, but may exist quite independently of it, and require the same treatment as the morbid conditions from which they have received their respective titles. The iodine injection may be regarded as certainly effectual when the fluid is serous, and even when it has the bloody character this means should be tried before having recourse to the more severe measure of incision. In this case it may be necessary, however, to repeat the injection, in order to complete obliteration of the cavity.

CASE I.

A. M'E., nine years of age, was admitted on the 7th of November 1860, on account of a tumour, about the size of a small hen's egg, lying over the posterior edge of the sterno-mastoid muscle. It was very tense, but distinctly fluctuating, and was said to have been noticed soon after birth, since which time it had gradually increased—of late more rapidly—and also become painful. Next day I introduced a trocar and drew off somewhat less than two ounces of dark-coloured fluid like that of a hæmatocele, and injected two drachms of the tincture of iodine. Four days later, as a portion of the tumour had not been evacuated on the former occasion, I again introduced the trocar and drew off some straw-coloured fluid similar to that of an ordinary hydrocele, and then repeated the injection. On the 18th the patient was dismissed, and on the 29th he returned to shew that he was quite well.

It thus appears that there was a double cyst,

escape notice than the unsuccessful cases. For my own part, I have tied the subclavian artery in three cases, two of which terminated well, and the third proved fatal from hemorrhage—the patient's arterial system being in a very unsound state, as indeed appeared from his having had the femoral artery tied by myself on a former occasion for popliteal aneurism. I have therefore no prejudice or hostile feeling towards the operation, but must admit, that except in certain conditions of the neck, it is a very difficult and troublesome process, especially on the left side, where the vessel lies lower.

It may be said, that the dangers of tying the subclavian, however great, must fall short of those to be expected from opening the sac, and securing the vessel at the seat of its rupture, such as the profuse hemorrhage to be anticipated at the time of performance—the exhausting suppuration of the large cavity exposed—and the risk of secondary bleeding from applying the ligature at an unsound part of the vessel. These seem indeed, at first sight, rather formidable objections to the

the injection. This was followed by a considerable diminution, but not complete obliteration of the cavity, and therefore was repeated on the 9th of May. On the 1st of June the patient was dismissed cured.

THE USE OF BLISTERS IN THE TREATMENT OF ULCERS.

In order to understand the proper treatment of an ulcer, it is necessary to know the process by which it is healed, and also the obstacles by which this result is apt to be opposed. Any one who, in conformity with common language, talks of a sore being "filled up," or supposes that the granulations are formed in successive layers, to supply losses of substance, is plainly not in a condition to entertain sound ideas on these subjects, and should lose no time in reading the essays of Fabre and Louis, in the Memoirs of the French Academy of Surgery. He will there find it explained that the appearance of filling up is a deception similar to that which makes bodies

at rest appear to be moving when surveyed by those who are not conscious of their own motion—and that when the surface of a sore comes to be on a level with the surrounding skin, it is from the latter descending, not from the former ascending. So long ago as when house-surgeon of the Royal Infirmary, I ascertained these facts for myself by the dissection of granulating sores after death; and I was afterwards glad to find the truth fully established in the writings to which reference has just been made. Since then I have constantly endeavoured to inculcate the correct explanation of granulating action; and it is therefore with no less surprise than regret that I see systematic works compiled for the use of students still maintaining the old views in regard to the growth of granulations.

The granulating action produces merely a thin pellicle or temporary skin, under which, instead of effusion or the formation of new substance, there is carried on a process of absorption that draws the surrounding textures together, and thus, in proportion to their laxity, lessens the size of the

resulting cicatrix. Instead, therefore, of using applications with a view to promote the formation of new tissues, or what the old surgeons called "carnifying" means, it is evident that the aim of remedial treatment should be directed towards the encouragement of contraction, and the removal, so far as possible, of whatever obstacles may stand in its way.

One of the best illustrations for this purpose is afforded by the callous or indolent ulcers to which the inferior extremities of the labouring classes are so peculiarly liable. There is here the appearance of a deep excavation, with firm round edges, in consequence of the subcutaneous cellular texture being greatly thickened and indurated into a brawny consistence, through the effect of long continued irritation. So long as this condition exists, no application can induce the healing process, while simply restoring the limb to its natural size renders any other means of treatment unnecessary. It was formerly supposed that the best way of accomplishing this object consisted in effecting pressure by the employment of plasters

and bandages ; but, more than thirty years ago, I shewed that a much easier, and also more efficient mode of procedure, was to apply a large blister over the thickened part of the leg, as it speedily dispersed the swelling, and thus allowed the granulating action to proceed without any farther interference, until cicatrization was completed. The saving of expense and trouble obtained by this mode of treatment might have been expected to insure its ready and general adoption ; but, with the exception of gentlemen educated in Edinburgh, I believe there are still few members of the profession even aware of its proposal. Indeed, the systematic books either entirely ignore it, or mention some feeble objection that shews the want of any practical experience. Some of them advise the blister to be no larger than the sore, and others express a great dread of erysipelas—of which, in the whole course of my practice, I never met with a single case so produced.

CASE I.

T. N., aged 51, quarryman, was admitted on

the 1st of March 1861, on account of two ulcers of the leg which had existed eleven years. One was the size of the palm of the hand, the other smaller. The surface of both was much depressed, the edges being round and hard, and the limb much swelled. On the 5th a blister was applied over the whole thickened part of the leg. On the 11th the surface of the sore was nearly on a level with the surrounding skin. On the 28th the ulcer was almost entirely healed. On the 12th of April the patient was dismissed cured.

Another obstacle to the healing of ulcers is the existence of some peculiar action which prevents the restorative process from producing its proper effect. There can be no better example of this than that afforded by persons whose constitutions have been injured by the use of mercury, and who so frequently suffer from sores, either superficial and confined to the integuments, or deep-seated and affecting the periosteum or bones. In both cases the constitution concerned is distinguished by characters which a practised eye

readily recognizes, and proves very obstinate under ordinary treatment.

It was formerly supposed, that very severe measures were requisite for the counteraction of this morbid state ; and I can recollect when the wards of an hospital resounded with the shrieks of patients having caustic potass applied to their sores, while glowing chauffers, bristling with red-hot irons, were carried into the operating theatre for cauterizing ulcerated shin bones. But many years have elapsed since the efficiency of milder means has been established through the use of iodine and blisters. Small doses of the iodide of potassium, such as two grains given three times a day in simple solution, seem productive of all the benefit to be derived from the former of these sources, while larger doses are not free from the suspicion of doing harm. I have said the solution should be simple—that is, in water merely—because it has long been my firm conviction, that the sarsaparilla so generally administered upon such occasions is utterly inert and useless. In private practice its employment may not be ob-

jectionable, if the patient can afford to pay for it, but hospitals should be protected from a useless expense, which in some of them annually exceeds many hundred pounds, and exerts the misleading influence that necessarily results from combining inefficient with efficient means in the treatment of disease. In regard to the blisters, it may be remarked, that when employed for the case under consideration, being required to act merely on the ulcerated surface, they should not extend beyond it.

That this most simple and powerful mode of treatment has not yet been generally adopted would appear from cases frequently coming to my knowledge, such as the two following, which have lately done so. In one of these the patient was Adjutant of a cavalry regiment in India, who came home for the express purpose of suffering a complete or partial amputation of the foot. I found it enormously swelled and deformed, with apertures that allowed the probe to pass, not only down to the bone, but into its substance. Under the treatment just explained, all the morbid

characters quickly disappeared, and the patient has gone back to resume service. The other case was that of the principal engineer in one of the Peninsular and Oriental Company's steam ships, who suffered from a most formidable enlargement at the upper part of his leg, apparently involving the knee joint, and allowing a probe to pass through several openings deep into the substance of the tibia. In the Mauritius and elsewhere the patient had been assured that amputation through the thigh would be requisite for his relief, and he expressed his perfect readiness to permit whatever seemed to me necessary. Under the same simple treatment he progressively improved; and is now in perfect health, making arrangements for resuming his situation.

CASE II.

C. H., aged 25, seaman, from Dundee, was admitted into the hospital on the 27th of March, with a large ulcer over the olecranon, exposing diseased bone to the extent of more than a half crown in surface, and apparently of considerable

thickness. He was extremely weak and emaciated, in consequence of having been dosed with mercury about eighteen months before on a voyage to India. Repeated blisters were applied, together with gr. ii. of Iod. Potas., taken three times a-day in simple solution. Under this treatment the patient quickly improved; some dead portions of bone separated, and he was dismissed cured on the 22d of May.

POLYPUS OF THE NOSE.

There are few subjects of surgical practice which have been so much misunderstood and improperly treated as those named simple or mucous, malignant, and fibrous polypus of the nose. In discriminating these very different morbid conditions, it is necessary to recollect, that the first mentioned is merely an expansion of the lining membrane, where it covers the superior spongy bone, never growing from the septum, floor, or external side of the cavity; generally existing gregariously in both of the nostrils; and not possessing such

force of increase as to produce either absorption or displacement of the osseous walls surrounding it. That the second is a morbid growth, proceeding from the bones of the face, or base of the skull, occupying either one or both nostrils, and having no limit to its enlargement, which may not only expand the cavity, but displace the eyeballs and alter the features. Lastly, that the third is attached to the surface of the bone by a single root, generally near the margin of the posterior nostril, whence it is apt to descend into the pharynx, so as to constitute a tumour that may be seen or felt behind the soft palate, and, more rarely, makes its way into the maxillary antrum, or through the bones of the face, so as to project under the cheek.

In regard to the treatment, it is obvious that the malignant polypus should be considered as beyond the reach of interference, since, not admitting of extirpation from the situation of its roots, it must render any operation not only useless but injurious, by giving an impulse to the morbid disposition.

The simple or mucous polypus used to be con-

sidered a hardly more favourable subject of treatment, from its tendency to relapse after extraction, in consequence of the operation being improperly performed. To understand this, it is only necessary to look at the instruments formerly employed for the purpose. They were forceps of a large size, so fashioned, with windows in their blades, as to seize the body of the polypus, and nibble it away at successive "sittings," as they were called; or still worse, crooked knives, scissors, and loops of wire, which could not possibly accomplish the object in view effectually. Instead of these faulty means, slightly curved forceps, of the smallest size consistent with adequate strength, should be gently insinuated along the base, or by the side of the superior spongy bone, with the blades expanded so far as the cavity permits, until, when closed, they are found to embrace the root of the growth; then, by a steady combination of twisting in one direction and pulling, the portion of substance comprehended between the blades is detached from its connection, when the polypus either follows or is so loosened that it falls into the pharynx, if

not blown through the nostril. By repeating this procedure, if necessary, the nose is thoroughly cleared, and unless there should be some unusually strong tendency to reproduction, the patient will experience no farther trouble.

CASE I.

W. H., 84 years of age, was admitted on the 13th of March 1861, having both of his nostrils completely obstructed by what seemed to be the simple mucous polypus. Next day I cleared the cavity completely, and on the 19th the patient was dismissed, greatly pleased with his improved condition.

CASE II.

T. L., 5 years of age, applied at the hospital on the 2d of May 1861, with both of the nostrils completely obstructed by the simple mucous polypus. By employing the forceps in the way that has been described, the cavity was immediately cleared.

The distinctive characters of the Fibrous poly-

pus were first pointed out by Dupuytren, who supposed that it was the early stage of a malignant or fungating tumour. But this opinion was certainly erroneous, since there is no transition, or any other connecting circumstance ever observed, between the two sorts of growth in question. The fibrous polypus is distinguished by the firmness of its texture, which frequently almost approaches that of ligament, and by its disposition to bleed, which either appears spontaneously, or is induced by attempts to effect extraction. It may be added, that there is also not unfrequently a constant discharge of watery fluid, and that respiration is usually obstructed completely in both nostrils, although the growth is confined to one of them.

Having had occasion to operate upon many remarkable cases of this kind, I feel warranted to state, that Dupuytren's plan of fixing a succession of hooked forceps into the body of the tumour is not the best way of effecting extraction, since it requires an enormous amount of force, as was shewn in one of his two recorded cases, which I had an opportunity of witnessing, where the surgeon and

two strong assistants had to unite all their strength for the accomplishment of evulsion. Instead of this procedure, I have found it much better to use the ordinary forceps employed for the removal of simple or mucous polypus, assisting their action by the fore and middle fingers of the left hand, introduced behind the soft palate, and aiming at the point of attachment, which seldom exceeds a small extent. In this way, by a few determined efforts, I have generally been able very speedily to overcome the difficulty. The bleeding, which is profuse, and to an unpractised eye very alarming, generally ceases immediately after the tumour has been removed ; but, if it should continue, may be easily arrested by plugging the posterior nostrils.

CASE I.

T. N., 15 years of age, from Dumfries, was admitted on the 7th of March 1861. It was stated, that about two years before this time he had begun to suffer, almost daily, a profuse bleeding from the nose, and also experienced difficulty of breathing, especially through the left nostril. Various reme-

dies having been tried without any good effect, a polypus was at length detected, but not considered remediable. More lately, an attempt had been made to extract it without success, and the symptoms becoming more aggravated, the patient was sent to me.

On examination I found a fibrous growth completely blocking up the nostril, and projecting backwards into the pharynx—the boy, from long continued hemorrhage, being extremely emaciated and quite anæmic. I therefore lost no time in performing the operation as it has been described, by making the fore and middle finger of the left hand, placed behind the soft palate, co-operate with the small forceps introduced through the nostril. In this way the tumour was easily removed, though not without considerable bleeding, which, however, was the last sustained by the patient, who left the hospital on the 15th, and is reported to have soon afterwards completely regained his health.

CASE II.

M. M'L., 20 years of age, from Ross-shire, was admitted on the 23d of May 1853. He stated, that until the last two years his health had been perfectly good, but that, during this period, he had suffered from frequent and excessive bleeding at the nose, accompanied by a gradually increasing swelling of the right cheek, and obstruction of breathing, at first through the right nostril, and then through the left also, until both were completely obstructed. After suffering in this way about twelve months, he had repaired to the Infirmary at Glasgow, where his case appears to have been regarded as irremediable, since, although he had while there a very copious discharge of blood, no attempt was made to afford relief. He therefore returned home ; and, as the hemorrhage became not only more frequent, but more severe, his state seemed entirely hopeless. But cherishing some idea of escape, the patient gathered together a little money for the purpose of coming to Edinburgh, which was regarded by his friends as so

useless an undertaking, that they seized upon his little store as the best means of preventing its execution. He, however, obtained the requisite means from some other source, and having accomplished the long journey, placed himself under my care.

I at once recognised the fibrous polypus of Dupuytren, to the one of whose two recorded cases, which I happened to witness, this patient's had a remarkable resemblance. The tumour was about the size of a small orange, firm, elastic, and slightly lobulated, not adherent either to the integuments or the mucous membrane, and evidently proceeding from the maxillary antrum through absorption of the bone. In order to get access to it, and also to afford the blood that must flow free vent for its escape, I laid open the cheek from the angle of the mouth backwards, so as to expose the tumour completely. Strong forceps were then fixed into it and used with all my force; while the fingers of the left hand assisted in detaching the roots. By these efforts, though not without time, labour, and fearful hemorrhage, the object was at length attained.

The wound of the cheek healed entirely by the first intention, so that it left no traces of its existence; and the patient, completely relieved from the disease, soon regained his health. He was dismissed on the 20th of June.

CASE III.

Eleven years ago Lord —— called upon me and presented the following letter:—

New Street, 25th June 1850.

Dear Sir—I beg leave to inform you that Sir Benjamin Brodie and myself, in the first instance, and Mr. Travers, Mr. Cæsar Hawkins, and myself, in a second consultation, made a strict investigation of Lord ——'s case, and that we all came to the conclusion, that no attempt at the removal of the disease (about which you are consulted) could, with any propriety, be recommended, *firstly*, on account of the extent of its attachment; *secondly*, on the impossibility of its complete extirpation; and *thirdly*, on the great probability of its return. My intention in writing

this, however, is only to express to you the opinion formed here, and not in any way to dictate to you ; but I considered it due to any surgeon to inform him of the investigation which has been made, and the conclusion which had been arrived at from the examination.—Believe me, etc.

BRANSBY B. COOPER.

P.S.—I wish you to see the prescription for the medicine I have recommended ; and should be obliged for your opinion on the case.

Lord —— then stated that he had returned from Canada, where he was upon the staff of Lord Elgin, to obtain relief from his complaint, and had been two months in London under the care of Mr. Cooper, together with the other gentlemen mentioned in his letter. As they all led him to understand that his case was hopeless, he was prepared to submit ; but, as a forlorn hope, wished to have my opinion on the subject. He then informed me that for a long while past he had been annoyed by impeded breathing through his nose, and a constant discharge of watery fluid from it,

which was particularly inconvenient at night by soiling his pillow during sleep ; but that within the last twelve months the complaint had assumed a more serious aspect by the accompaniment of frequent and excessive hemorrhage. Upon examination I found the nostrils very narrow, and presenting nothing to view on the most careful inspection ; but in the pharynx I felt a round tumour protruding from the left posterior opening of the nasal cavity, which completely accounted for all the symptoms. The patient told me that this growth had been detected in London, where it was proposed to attempt its removal by dividing the soft palate ; but that this proposal had been rejected as no less impracticable than useless.

Rather surprised that any difficulty should have been experienced in the case, I at once expressed my readiness to remove the polypus by extraction through the nose ; but this proposal was too startling for immediate acceptance, and I was therefore requested to communicate with Mr. Cooper, while the relatives were acquainted with the opinion that I had expressed.

In the course of a few days, during which one of the profuse bleedings took place, the requisite sanction having been obtained, I was requested to do whatever seemed proper; and therefore, with the assistance of Dr. Duncan, which I had asked in anticipation of hemorrhage, proceeded without delay to the operation. I used the ordinary small polypus forceps, and by a single twist of them brought away the whole of the morbid growth through the nose without any bleeding worthy of mention.

Thus a disease regarded as incurable was instantly removed; the respiration became free; there was no more hemorrhage; and the general health soon became restored; so that the patient was able before long to return to Canada, where he resumed his military duties. He afterwards went to India and commanded one of Her Majesty's regiments during the mutiny campaign, never having experienced the slightest tendency to relapse, or any inconvenience except the loss of his olfactory sense, which was not regained.

AXILLARY ANEURISM.

The Hunterian operation was so greatly and manifestly superior for the treatment of popliteal aneurism, to the one previously in use, that it speedily banished the latter from professional confidence, and came to be regarded as the proper course upon all occasions admitting of its adoption. But there appears to be good ground for suspecting that this generalization was no less unjust than hasty, since, while the popliteal vessels were situated very unfavourably for the old operation, and the femoral artery lay most conveniently for the new one, there were other parts of the body in which, the conditions being reversed, there was not the same reason for preference. In the popliteal region the vein lies over the artery, with which it is inclosed in a firm sheath, so as to render ligature of the latter almost impracticable without injury of the former, which would cause mortification of the limb as a necessary consequence of both vascular trunks being obstructed ; while,

on the other hand, the femoral artery is more superficial than the vein, and easily accessible for ligature. But, in regard to axillary aneurism, the state of matters is precisely the opposite, since the artery is readily within reach at the seat of disease, and exposed with great difficulty at any part of its course nearer the heart. Thus, it will be found that almost all the earlier operations performed on the Hunterian principle for axillary aneurism were mortifying failures, and that it has been only since Mr. Ramsden led the way to ligature of the subclavian at the best place for the purpose, that this mode of treatment has proved at all satisfactory. Even in this improved, or, as it has been thought, perfect state, the operation will be found to have been abundantly fruitful of fatal results, as appears from the researches of Mr. Erichsen, whom all the cases that he could find on record have led to the conclusion that 50 per cent perish from the various effects of hemorrhage, inflammation, and deep-seated suppuration—the true average being obviously much more unfavourable, as the successful are less likely to

escape notice than the unsuccessful cases. For my own part, I have tied the subclavian artery in three cases, two of which terminated well, and the third proved fatal from hemorrhage—the patient's arterial system being in a very unsound state, as indeed appeared from his having had the femoral artery tied by myself on a former occasion for popliteal aneurism. I have therefore no prejudice or hostile feeling towards the operation, but must admit, that except in certain conditions of the neck, it is a very difficult and troublesome process, especially on the left side, where the vessel lies lower.

It may be said, that the dangers of tying the subclavian, however great, must fall short of those to be expected from opening the sac, and securing the vessel at the seat of its rupture, such as the profuse hemorrhage to be anticipated at the time of performance—the exhausting suppuration of the large cavity exposed—and the risk of secondary bleeding from applying the ligature at an unsound part of the vessel. These seem indeed, at first sight, rather formidable objections to the

procedure in question ; but, when dispassionately considered, will be found to lose much, if not all of their force. For, in the first place, it has been established that the operation may be so conducted as to reduce the loss of blood within a very moderate amount ; then the cavity, if freed from indurated coagulum, is found to contract and close with great facility ; and lastly, the alleged inability of the vessel to be tied with safety at the ruptured part, appears to be purely matter of assumption, which is completely contradicted by experience.

In spontaneous aneurism it has been an established principle that all the portion of artery included within the sac is to be deemed unsound, and unworthy of confidence as a subject for the ligature. But this view appears to have been rashly adopted, since extension of the sac does not depend upon the state of the vessel, or in any way affect it, and as the disease, notwithstanding its title of spontaneous, to distinguish it from the traumatic form, in 99 cases of 100, or rather perhaps always, proceeds from some local injury stretching or bruising the coats at a particular

point of their extent. It may be further remarked that although in an aneurism of any given size, the artery beyond its limits is deemed to be sound, it would be considered diseased at the same part if the tumour had extended its limits ; while it is obvious that this change could not have produced any alteration in the state of the vessel. It was these considerations which guided me safely through the following very formidable case.

A gentleman, about 50 years of age, resident in Glasgow, applied to me on account of an axillary aneurism of large size, and having been advised to have the subclavian artery tied, went home to make the necessary arrangements. Upon his return to Edinburgh I found the arm greatly swelled from the shoulder downwards, of a bright red colour, and extremely painful, in which state it continued with aggravation of the symptoms, notwithstanding all the soothing means that could be employed. In the course of two or three days the redness assumed a dusky hue, and vesication appeared at various parts of the surface,

there being at the same time extreme frequency of pulse, with other indications of intense constitutional disturbance. In these circumstances it was manifest that the result must soon prove fatal, unless some effectual means of relief were speedily employed. Of these the only one that seemed practicable was amputation at the shoulder-joint, which of course would instantly terminate the patient's existence, unless the ruptured artery admitted of being tied. But for the reasons which have been stated, entertaining no doubt on this point, I did not hesitate to perform the operation, cutting through a mass of gangrenous muscles, and exposing the artery a little below the clavicle, where the coats at its orifice, seeming quite sound, the ligature was applied. Everything went on favourably afterwards, so that in less than three weeks the patient felt able to go home, where he enjoyed good health for several years, until carried off by a different disease. Fortified by this experience, I was prepared for the following still more arduous undertaking.

CASE I.

D. L., æt. 47, applied for admission into the hospital on the 26th of January 1860, on account of a large tumour, which completely filled the left axilla, and greatly distended the muscles, before as well as behind the shoulder. The skin was tense, but not at all discoloured, and an obscure fluctuation could be perceived throughout the whole extent of the swelling, which the patient positively stated had not existed more than a week, although for nearly two months he had felt pain in his shoulder, and observed that there was no pulse at the wrist. There was a distinct aneurismal bruit, but no pulsation that could be felt in the tumour, except at its upper part, which projected above the clavicle. As in these circumstances there could be no hesitation in regarding the disease as an aneurism, careful inquiry was made as to the probable cause of its origin, but at first without success, since the patient positively denied having experienced any blow or wrench adequate to produce the effect. At length, how-

ever, he stated that, being tenant of a saw-mill, he occasionally assisted his men in turning heavy logs by means of the "cant-hook," and that upon such occasions—having had his left hand amputated at the wrist-joint by myself twelve years ago, on account of an injury from a saw—he was accustomed to rest his elbow on the pole, which was apt to spring up with great force, and thus subject his arm to a violent jerk at the shoulder. Having met with a case of axillary aneurism which was caused by the patient simply raising his arm to prevent his hat from being blown off as he got out of a railway carriage, I deemed this explanation sufficient.

In the course of a few days after admission, the tumour enlarged considerably, and assumed a dark colour at some parts of its surface; while a slough formed over the scapula, where the pressure was most severe. At the same time the patient began to wander in his ideas, and his pulse rose to 130. It was therefore manifest, that unless some decided steps were taken without delay to afford relief, the result must very soon

prove fatal. Ligature of the subclavian was quite out of the question, from the tumour extending above the clavicle; and amputation at the shoulder-joint at first seemed to be the only alternative. But before proceeding to this desperate remedy, I felt desirous of ascertaining the state of matters in the axilla, and therefore proceeded in the following manner:—

On the 1st of February, chloroform having been administered, I made an incision along the outer edge of the sterno-mastoid muscle, through the platysma myoides and fascia of the neck, so as to allow a finger to be pushed down to the situation where the subclavian artery issues from under the scalenus anticus and lies upon the first rib. I then opened the tumour, when a tremendous gush of blood shewed that the artery was not effectually compressed; but while I plugged the aperture with my hand, Mr. Lister, who assisted me, by a slight movement of his finger, which had been thrust deeply under the upper edge of the tumour and through the clots contained in it, at length succeeded in getting com-

mand of the vessel. I then laid the cavity freely open, and with both hands scooped out nearly seven pounds of coagulated blood, as was ascertained by measurement. The axillary artery appeared to have been torn across, and as the lower orifice still bled freely, I tied it in the first instance. I next cut through the lesser pectoral muscle, close up to the clavicle, and holding the upper end of the vessel between my finger and thumb, passed an aneurism needle, so as to apply a ligature about half an inch above the orifice. The extreme elevation of the clavicle, which rendered the artery so inaccessible from above, of course facilitated this procedure from below. Everything went on favourably afterwards. The edges of the wound, which had been brought together by stitches of the silver suture, united chiefly by the first intention. The ligature was found loose on the thirteenth day, the pulse gradually decreased in frequency as the patient regained his strength, and the discharge, which was at first profuse and mixed with clots of blood, progressively diminished. He was dismissed on the 14th of March, six weeks

after the operation, and before long resumed his employment, in the possession of perfect health.

When this case was communicated to the London Medico-Chirurgical Society, a professor of surgery, whose ideas upon the subject must be rather peculiar, contended that the aneurism was *traumatic!!* so as not to imply unsoundness of the artery. I may therefore mention that the patient having died lately from aneurism of the aorta, it was found on dissection that his arterial system was in a state of general and extreme degeneration.

A circumstance in this case which appears to me particularly deserving of attention in a practical point of view, is the method that was employed to obtain command over the artery before it was tied, since, unless this had been done, it is obvious that a fatal hemorrhage must have speedily ensued after the sac was opened. Thirty years ago I acted upon the same principle in my first operation for removing the superior maxillary bone. An attempt had been previously made in another case to accomplish this object, but without suc-

cess, on account of the hemorrhage ; and, although at a loss to understand how it should prove troublesome if the incisions were properly conducted, I resolved to obtain command over the only source from which the blood could proceed from the deep part of the wound, which was the internal maxillary artery. With this view I made an incision between the ramus of the jaw and mastoid process, so as to enable the gentleman who assisted me, the late Sir George Ballingall, to introduce his finger, and compress the vessel on the neck of the condyle. This had the desired effect, which, as I expected, proved quite unnecessary, and the operation was completed, for the first time in Great Britain, on the 15th of May 1829.

I venture to hope that, through the employment of this expedient, axillary aneurisms not amenable to ligature of the subclavian artery may be remedied by the old operation ; and I am inclined to think that, even in cases where the former procedure is practicable, the latter may be preferable. Upon two occasions, as already said, I have tied the subclavian artery for aneurism with

perfect success, and have therefore no prejudice against the operation; but nevertheless, I feel satisfied that it is much more difficult of execution, more apt to be followed by hemorrhage, as well as fatal inflammation of the deep textures, and less certain to afford relief, than the other method. For it by no means necessarily follows, that after the artery has been tied, the contents of the aneurism are always absorbed, while, when the sac is opened, the whole of the effused blood is at once removed.

CASE II.

About twelve months ago, Dr. Embleton of Embleton in Northumberland, placed under my care another axillary aneurism. The patient was a farmer and fish-curer, about fifty years of age, of a robust frame and highly excitable disposition. The tumour was the size of an orange, and extended from the axilla downwards. It had commenced about a year before without any distinctly assignable cause, and increased slowly until the last month or six weeks, during which its progress be-

coming more rapid, rendered relief very desirable. In conformity with the views that have been explained, I did not hesitate to choose the old operation as most expedient for this purpose, and accordingly performed it on the 17th of August.

Finding that the radial artery, having a very high origin, ran over the surface of the sac, I took care to avoid it in laying open the cavity, and then, having turned out the clot, had no difficulty in tying both orifices of the vessel, the pulse at the wrist remaining undisturbed. Next day the patient was restless, with hurried circulation and confusion of ideas. On the following day his condition distinctly assumed that of delirium tremens, to which I then, for the first time, learned his habits strongly predisposed him. At the same time the arm became greatly swelled from the shoulder downwards, at first of a red and afterwards of a yellowish colour. The constitutional disturbance then gradually subsided, but suppuration and sloughing of the subcutaneous cellular texture took place, requiring incisions at different parts of the limb. Yet notwithstand-

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ing these adverse circumstances, so rapid was the subsequent process of improvement, that in less than a month after the operation the patient returned home, where he soon regained his health.

It cannot, I think, be doubted that the threatening of gangrene in this case proceeded from the constitutional tendency to overaction, and that if the artery had been tied above the origin of the radial, the result would in all probability have been fatal.

ANEURISM OF THE COMMON CAROTID
ARTERY.

Four years ago I received the following letter from Mr. Haldan of Ayr :—

Ayr, 10th June 1857.

My dear Sir—I saw a man, named David Craig, living in the neighbourhood of Daily, yesterday. He has an aneurism, of considerable size, on the left common carotid, low in the neck.

I advised him to lose no time in putting himself under your care, if you will have the kindness to admit him into your wards. The history is as follows :—Seven weeks ago, in a brawl, he was stabbed in the neck, on the left side ; the wound was about an inch in extent superficially, and situated immediately over the track of the great vessels, an inch and a half above the sterno-clavicular articulation. The wound was received in a rather dark room, about two o'clock in the morning, and he was discovered almost immediately after lying in a great quantity of blood. I believe the hemorrhage had by that time stopped. About four o'clock in the afternoon, while answering some questions that were being put to him by a police constable, violent hemorrhage again occurred, and in five minutes he was all but dead. The hemorrhage is described as *not* having occurred *per saltum*, but the blood as being of a rather red colour. I saw him, as a medico-legal case, twenty-five hours after the injury. He was then very pale and weak. The wound had been brought together by three sutures after the second bleed-

ing. There was a small flat tumour, as of a clot, lying over the vessels, and to which a pretty firm impulse was communicated. The pulsation of the right carotid was very feeble. I did not see the case again till yesterday, when I was informed that the small tumour observed after the injury slowly decreased in size, and, about eight days ago, the present tumour was observed, and that since that time it has been rapidly increasing.—

I am, etc.

JOHN C. HALDAN.

The man was to go into Edinburgh to-day.

The patient, a young man, æt. 20, was admitted into the hospital on the 10th of June. The aneurism, which was about the size of an orange, extended in a transverse direction from the trachea to the outer edge of the sternomastoid, and downwards close to, or rather under, the clavicle, throbbing throughout with great force. Nearly at the centre there was a cicatrix, shewing where the wound had been. In the course of a few days, notwithstanding confinement to the horizontal posture, and low diet,

there was a distinct enlargement of the tumour, so that it seemed necessary to decide without delay upon the course to be pursued.

The case was obviously one of great responsibility, involving, as it did, not only the patient's life, but also that of his assailant. There could be no doubt that if the aneurism were allowed to proceed it would before long prove fatal, by interfering with respiration, or opening inwardly, if it did not do so upon the external surface. On the other hand, it was evidently impossible to tie the artery below the tumour, while an aperture could not be made into it without subjecting the patient to instant and extreme hazard. The wound of the artery might be opposite the cicatrix, but it might also be situated at a lower point if the knife, as was not improbable, had a downward direction, in which case it would hardly be possible to apply a ligature; and, wherever situated, it could afford little assistance in discovering the vessel, since the pressure which had been in operation for nearly two months must have so consolidated the textures as to render their recognition

and separation equally difficult. There thus seemed to be not only a great risk of the hemorrhage proving incontrollable, but also a hardly less formidable danger of injuring the internal jugular vein. Having carefully balanced these different considerations, I arrived at the conclusion that it was my duty to give the patient his only chance of escape, and proceeded to perform the operation on the 17th of June.

Chloroform having been fully administered, and the patient being placed upon his back, with his shoulders slightly elevated, I pushed a knife through the cicatrix, and followed the blade with the forefinger of my left hand so closely as to prevent any effusion of blood. I then searched through the clots and fluid contents of the sac for the wound of the artery, and found that pressure at one part made the pulsation cease. Keeping my finger steadily applied to this point, I laid the cavity freely open both upwards and downwards, turned out the clots, and spunged away the fluid blood so as to get a view of the bottom, which presented the smooth shining aspect of a serous

membrane, without the slightest indication of either the artery or vein that could be seen or felt. In order to make the requisite dissection, I next attempted to close the orifice by means of forceps, but found that it had the form of a slit which could not be thus commanded. It was also so near the clavicle, that pressure could not be employed below it, and, to my still greater concern, lay on the inner, or tracheal side of the vessel, so that the compression required for its closure, instead of being backwards upon the vertebræ, was outwards upon the vein. In these circumstances it seemed proper, so far as possible, to lessen the opposing difficulties, and I therefore ran a bistoury through the skin and the sternal portion of the sterno-mastoid, so as to divide this part of the muscle together with the superjacent integument. I then seized the edge of the slit in the artery, as it lay under my finger, with catch forceps, and desired them to be held so as to draw the vessel towards the trachea, while still subjected to compression; then carefully scratched with the point of a knife until the arterial coat

was brought into view at its external edge, a little above the aperture, where a ligature was passed by the needle and tied. I repeated the same procedure below the wound, and, when it was completed, had the satisfaction of finding that my finger could be withdrawn without the slightest appearance of bleeding, instead of the tremendous gush which had previously attended its slightest displacement. The ligatures separated on the tenth day, and the patient, who had suffered no inconvenience since the operation, was dismissed on the 17th of July.

I have thus particularly related the steps of this operation, because it was by far the most arduous that has ever occurred in the course of my surgical experience. Indeed, even now I cannot, without a shudder, reflect on my position, when the slightest displacement of one hand must have instantaneously caused a fatal hemorrhage from the carotid artery, and a wrong direction of the needle by the other, to the smallest possible extent, would have given issue to an irrepressible stream from the jugular vein.

LIGATURE OF THE CAROTID ARTERY FOR AN
ANEURISMAL TUMOUR OF THE ORBIT.

In 1809 Mr. Travers tied the carotid artery with success for the remedy of what he regarded as an "aneurism by anastomosis in the orbit." Since then various cases of a similar kind have been placed on record ; but the one about to be related is, so far as I know, the first that has occurred in Scotland.

Mrs. B., aged 22, recommended to my care by Dr. Adamson of St. Andrews, was admitted into the hospital on the 26th of June last, on account of protrusion of the right eye-ball, which was so projected that the lids could hardly meet over it, the lower one being everted, with great vascular swelling of the conjunctiva. In the hollow of the orbit on the upper side, and along the frontal ridge, a pulsating tumour could be felt. The patient complained of an unceasing and most distressing noise in her head, which could be heard by applying the ear to any part of it. When

pressure was made on the carotid, all the symptoms were suspended, the orbital tumour subsiding, and the noise, together with other disagreeable feeling, suddenly ceasing. But if the pressure was at once withdrawn, there instantly occurred an intolerable sensation, which it was stated sometimes lasted for several days, while a gradual removal of the compression was not productive of any similar consequence.

In the preceding month of October the patient had noticed a slight tendency to protrusion of the eye, which, when mentioned to her friends, was treated with ridicule, and did not prevent her from being married in the December following. Four or five weeks after this event she suddenly felt a smart pain in the right temple, which lasted for a couple of hours, and was speedily followed by distinct protrusion of the eye-ball, with double vision. Attacks of the same kind occurred afterwards, with intervals of from three to ten days, and then the state of matters became such as has been described. In these circumstances Dr. Adamson and Mr. Watson Wemyss of Denbrae,

who before he relinquished the profession devoted much of his attention to ophthalmic surgery, and in whose neighbourhood the patient resided, was of opinion that ligature of the carotid afforded a fair prospect of recovery ; and, taking the same view, I did not hesitate to perform the operation.

On the 3d of July I tied the carotid immediately above the crossing of the omo-hyoideus, with the effect of instantly relieving the patient from all her uncomfortable feelings. A few days afterwards, as the ectropium of the lower eyelid still remained, I removed by scissors the whole projecting conjunctiva. On the 9th the eye was nearly natural in its position, and the double vision had ceased. On the 17th the ligature separated, and on the 27th the patient was dismissed.

The circumstances of this case have a remarkable resemblance to those of the one originally related by Mr. Travers, and most of the others since recorded. There is the adult age—the female sex—the sudden pain—the noise in the head—the protrusion of the eye-ball—the eversion of the eye-lid—the pulsatory enlargement

at the margin of the orbit—and the remedy by ligature of the carotid. The symptoms are so similar to those of aneurism by anastomosis, that it seems at first sight as if there could be no doubt in regard to the nature of the disease. But it must be admitted that the suddenness of commencement, without any premonitory sign or congenital preparation, together with the effectual relief afforded by tying the arterial trunk leading to the part concerned, are not consistent with the ordinary features of an aneurismal erectile tumour. The only opportunity of solving the difficulty by dissection occurred in the practice of Mr. Nunnely, who tied the carotid for what seemed to be a tumour of the kind in question; but, on examination of the patient, who died soon after the operation, did not find any distinct evidence of the disease. While the pathology of this peculiar derangement thus remains obscure, it is satisfactory to learn, that in such cases the carotid artery may be tied with almost the certainty of affording complete and permanent relief.

LIGATURE OF THE INTERNAL ILIAC
ARTERY.


F. S., 22 years of age, recommended by Dr. Ranken of Carlisle, was admitted on the 15th of May last, in the hope of obtaining relief from a tumour in his left buttock. It was round and tense, lying over the sciatic notch, and presenting the aspect of a chronic abscess; but being found to have a strong expansive pulsation when the hand was placed over its surface. The swelling was greatly reduced in bulk by pressure, but speedily regained it when freed from restraint, with a still more forcible distending throb; and as the aneurismal bruit was also very strongly pronounced, there could not be any doubt entertained in regard to the nature of the disease. The patient stated that he had only lately become aware of the disease, having his attention directed to it by pains in his hip and weakness of the limb.

In choosing between the Hunterian and old

operations, I had here no hesitation in preferring the former, since there could not be any certainty as to the arterial orifice being within reach of the latter. I was not acquainted with any well authenticated case of the internal iliac having been tied successfully in Europe, but knew that this had been done elsewhere; and therefore felt no reluctance to undertake the task, though aware that it must be attended with difficulty from the deep situation of the vessel, the shortness of its course, and the vicinity of large veins.

On the 29th, chloroform having been administered, I made an incision, about six inches in length, from a little above the middle of Poupart's ligament in a crescentic form, at first upwards and outwards, and then upwards and inwards, passing the superior spinous process of the ilium at the distance of rather more than an inch. I then exposed the aponeurosis of the external oblique muscle, and ran a blunt-pointed bistoury through it, together with the muscle, to the full extent of the first incision. In the next place I made an opening at the lower part of the wound

through the internal oblique and transverse muscles, together with the fascia transversalis, so as to admit the point of my finger upon which the bistoury was guided, so as at once to divide completely the whole of these parts. The only vessel requiring ligature, which was a small branch of the circumflexa ilii, having been tied, I pressed the peritoneum inwards, and without any delay or groping, placed my finger on the bifurcations of the common iliac. Finding that any attempt to bring the vessel into view would be quite impracticable, I proceeded to pass the needle under it with such guidance as was afforded by the very distinct perception of its coats, which in this situation are so loosely connected with the neighbouring parts as to render this mode of procedure less dangerous than it might appear at first sight. Feeling the point fairly past the artery, I slid down a pair of dressing forceps, seized the thread, disengaged it, and completed the ligature with all the tightness possible. The tumour immediately became greatly reduced in size, and entirely lost its pulsation, but at the end of two



days slightly regained it, and afterwards varied in this respect; while the diminution of size was steadily progressive; so that the patient, feeling quite well, went home on the 29th of July.

I may here remark that the operation was greatly simplified by the method I adopted in dividing the muscles, since they were so thick that if they had been cut through by degrees the process must necessarily have proved tedious and embarrassing; while the slight adhesion that exists between the fascia transversalis and peritoneum opposed none of the resistance which would have been encountered if I had attempted to carry the knife along the external surface of the former membrane. In tying deep-seated arteries, it has been frequently thought necessary to employ

complicated instruments for passing the ligature round the vessels ; but I feel quite sure that the simplest form of needle is the best. The one I used is here represented very accurately, in regard to both form and size. It will be observed that the eye is not a slit, but circular and close to the point, so that the thread is readily caught when conveyed beyond the vessel. With this needle, besides the common, external, and internal iliacs, I have tied the femoral artery thirty, the humeral ten, the carotid six, and the subclavian four times.

GLATEAL ANEURISM.

J. C., aged 44, from Carlisle, was admitted on the 9th of June last, suffering from a very formidable aneurism of the left buttock. He stated that seven years ago, having been employed in cutting willows for basket-making, he placed in his coat pocket the knife employed for this purpose, which had a long, narrow, and sharp blade, with a large thick wooden handle, and then threw

the bundle of osiers, which he had collected, over his shoulder. In doing this he struck the knife with such force as to drive it deeply into the hip, and caused the blood to flow with great profusion. Soon afterwards he was found lying in a very exhausted state by some children, who had him conveyed to the Carlisle Infirmary, where the wound was dressed superficially, and healed, with the result of a pulsating tumour, the size of an orange, remaining at the part. This had occasioned little inconvenience, and rather been a subject of amusement to himself and friends, until lately, when it suddenly enlarged, and became the source of pain, which was constantly severe, but occasionally increased to a degree that was almost intolerable. He had on this account again applied to the Carlisle Infirmary, and resided there for two or three weeks, during which an embrocation had been employed and a plaster prescribed. In these circumstances Dr. Elliot recommended him to my care.

On examination I found an enormous tumour, measuring more than thirteen inches across in

both of its directions, extremely tense, and pulsating strongly, while the pain had become still more intolerable through the fatigue of travelling. It was evident that there should be no delay in resorting to some effectual means of relief; and of these I could not hesitate in preferring the old operation, since, although the case was more favourable for ligature of the internal iliac than the one in which I had recently operated, from the greater thinness and laxity of the muscular coverings, the large size of the tumour was opposed to the process of coagulation and absorption, while the patient's history clearly shewed that the vessel must be within reach at the seat of injury. I therefore resolved to follow this course, and proceeded to do so on the 14th.

The patient having been rendered unconscious and placed on his right side, I thrust a bistoury into the tumour, over the situation of the glateal artery, and introduced my finger so as to prevent the blood from flowing, except by occasional gushes, which shewed what would have been the effect of neglecting this precaution, while I

searched for the vessel. Finding it impossible to accomplish the object in this way, I enlarged the wound by degrees sufficiently for the introduction of my fingers in succession, until the whole hand was admitted into the cavity, of which the orifice was still so small as to embrace the wrist with a tightness that prevented any continuous hemorrhage. Being now able to explore the state of matters satisfactorily, I found that there was a large mass of dense fibrinous coagulum firmly impacted into the sciatic notch, and—not without using considerable force—succeeded in disengaging the whole of this obstacle to reaching the artery, which would have proved very serious if it had been allowed to exist after the sac was laid open. The compact mass, which was afterwards found to be not less than a pound in weight, having been thus detached so that it moved freely in the fluid contents of the sac, and the gentlemen who assisted me being prepared for the next step of the process, I ran my knife rapidly through the whole extent of the tumour, turned out all that was within it, and had the bleeding orifice in-

stantly under subjection by the pressure of a finger. Nothing then remained but to pass a double thread under the vessel, and tie it on both sides of the aperture.

The patient did perfectly well after this operation, with exception of complaining that he felt pain at the upper part of the thigh, for which I could not satisfactorily account until about three weeks afterwards, when I discovered a deep-seated abscess lying over the sciatic nerve. The matter having been evacuated by a free incision, there was immediate and complete relief, so that the patient was dismissed on the 29th of July perfectly free from complaint.

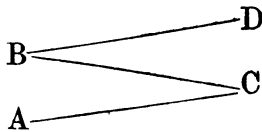
AVULSION OF THE ENTIRE SCALP.

On the 2d of February last, M. C., about 24 years of age, the daughter of a farmer in Perthshire, applied to me for relief from a very unseemly and inconvenient condition of the upper and lower lids of her right eye, the former being everted with great expansion of the con-

conjunctiva, and the latter so much elevated as to make vision impracticable unless when it was held down. Upon inquiring into the history of this condition, I was told, that about eight years ago the patient, while standing beside her father in his threshing mill, had her hair, which was very long, caught by some part of the machinery, and pulled with such force as instantly to tear away the whole scalp, including the eye-brows, so that, instead of the light-coloured locks, there was suddenly presented to the horrified view of her parent the bleeding surface of a bare cranium. Contrary to what might have been expected, the healing process had gradually completed cicatrization, except at a small part towards the vertex, where there was still a slight discharge of matter, all the bones being elsewhere covered by a smooth shining pellicle resting directly upon them; while the ears, eye-lids, and other parts in the vicinity of the lost integument were drawn up to assist in supplying its place. The hair that caused the accident had been formed into a wig, which formed a comfort-

able covering for the head, and by its amplitude presented a surprising contrast to the bare poll.

In order to remedy the displaced condition of the eyelids, which was the only complaint of any consequence that remained as an effect of this remarkable injury, it appeared requisite that both the upper and lower one should be depressed. With this view, after removing the hypertrophied and projecting conjunctiva, I made two incisions along the lower lid, so as to form a triangular flap, having its base at the outer angle, and its apex near the inner canthus. This portion of skin having been detached from its subjacent connections, I made an incision from the upper end of its base along the other lid, and having separated the cut edges, inserted the flap between them so as to increase the breadth, and consequently lower the level of this one, while the lips of the wound in the lower lid, being united by sutures, depressed it sufficiently to leave the eye-ball uncovered.



The incisions, in short, were made in this form,—the flap, A B C, being inserted

between the edges of B D. The result was in every respect satisfactory, and the patient left the hospital quite pleased with her improved appearance on the 2d of March.

REMEDY OF REDUCIBLE HERNIA.

The permanent remedy of reducible hernia has long been regarded as an important object of surgery ; and it is difficult to estimate the amount of misery that would be prevented by effectual means for the purpose. The numerous trials daily made by those who can afford the requisite expense and trouble for obtaining a perfect mechanical support, afford the best evidence of what must be endured by poor people, who must be content with the bandage supplied by some charitable institutions, or obtained through their own scanty resources. From my own observation, indeed, I can testify that in a very large proportion of such cases the truss does more harm than good, by pressing on the protrusion instead of restraining it. If, therefore, the abdo-

minal apertures could be closed by surgical procedure a great benefit would unquestionably be conferred upon suffering humanity, and hence, after all the other proposals for accomplishing this object had proved unsatisfactory, the operation of Professor Wutzer met with a very favourable reception. The sanguine expectations of its complete success, which were at first so freely entertained and frankly expressed, have of late been somewhat chilled by the reports of numerous relapses; but as these may have been owing to some imperfection of the procedure, I still venture to hope that a step has been taken in the right direction, and that if not able to cure all cases of the kind in question, we shall at least have it in our power to remedy some of them, and relieve others.

Nothing can be more simple in theory than the procedure of M. Wutzer, which is to push up the integument so as to invaginate it within the inguinal canal, and attach its highest point within the tendinous aperture by thrusting a needle through all the textures at this part. But the apparatus originally employed for accomplishing

this object is extremely complicated and very difficult to manage, so that various modifications have been proposed for its improvement, without, so far as I know, at all lessening either of these objections. For my own part I was deterred from attempting to perform the operation by the complexity of means thus employed in its performance; but regarding the principle of treatment as deserving of confidence, adopted the following plan of carrying it into execution :—

Instead of a complicated machine for distending the invaginated integument, I employed a piece of bougie or gutta percha, to one end of which was attached a strong double thread. The plug thus prepared and smeared with cantharides ointment, was drawn into its place by the threads, which, by means of a curved needle, guided on the finger fairly within the ring, were passed, at the distance of rather more than an inch from each other, through all the textures to the surface, where they were tied firmly together, on a piece of bougie, to prevent undue pressure on the skin. It was feared by some, that the substitution of a

thread for the needle, as a means of retaining the displaced parts in their new position, would produce an undue degree of irritation, but I regarded the difference of effect that might be thus anticipated, as favourable for the purpose in view, and I have not met with any unpleasant symptom from this source. The advantages of this procedure are--1, that it may be executed by means which are in the possession of every surgeon, instead of the complicated, expensive, and not easily manageable apparatus, hitherto deemed indispensable; 2, that it may be accomplished with much more certainty through the secure guidance of a finger, than by trusting to a piece of wood for gaining admission within the tendinous ring; 3, that the two threads, co-operating in their effect, render the chance of adhesion between the textures much greater than when it is attempted by the mere puncture of a needle.

CASE.

A. W., aged 21 years, a seaman, was admitted into the hospital on the 30th of January last,

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long-continued catarrhal irritation of the bladder, doubtless caused by the efforts to break the stone in Paris, which fortunately proved abortive, as the fragments could hardly have been removed without still more mischief.

REMOVAL OF A HAIR PIN FROM THE BLADDER.

J. F., aged 21, a stout young woman from the country, recommended to my care by Dr. Howden of Haddington, was admitted into the hospital on the 17th of November last, for the removal of a hair-pin, which had been introduced into the bladder. It was said to be of the double kind, about two inches long, with two points at one end, and a loop at the other, and could be readily felt on examination by sounding; so that the only difficulty attending extraction appeared to proceed from the risk of seizing the wrong extremity, especially as from being retained several weeks it might be expected to have acquired some degree of phosphatic incrustation, which

detached observations of preceding authors, he has described the disease thus designated, explained its nature, and endeavoured to establish what seemed to him the proper principles for conducting its treatment. The representation here given of the case that I am about to relate, will convey some idea of the shocking appearance by which this derangement is characterized. The



tongue protruding to the extent of three inches or more, so as nearly, if not quite, to touch the sternum, and thickened in a corresponding degree, so as to assume a globular form, impedes articulation, mastication, and deglutition, presses forwards

the teeth of the lower jaw, which are usually encrusted with tartar, or altogether displaced, while the jaw itself is altered in form, or rather retains the obtuse angle of infancy, so that, even when relieved from the resistance of the tongue, it cannot be brought into contact with the upper one. The surface of the tongue is of a brown or bluish colour, roughened with tubercular elevations, and frequently ulcerated, with a tendency to bleed. The lower lip is completely everted, and allows a constant discharge of saliva, which greatly increases the patient's discomfort. It is indeed surprising that existence can be tolerated in such distressing circumstances, and yet most of the cases on record had existed from ten to fifteen years; while, in one related by Sandifort, the patient, who was a lady in Leyden, had endured the deformity for no less than forty years, with the very imperfect palliation afforded by the covering of a silver case, which she had had constructed to conceal it from view.

It appears that the disease is usually, if not always, congenital; and Lassus says, that Gaspar

Peucer was the first to remark, that infants were sometimes born with their tongues hanging out of their mouths, like that of a recently slaughtered calf. Indeed, there is one instance on record of a foetus in utero presenting the protrusion. It has naturally been attributed to a morbid enlargement of the tongue; but Lassus maintains that this is an effect, and not the cause of the disease, which he believes to be displacement of the organ. He therefore regarded, as altogether unnecessary and improper, any interference by cutting instruments, as was employed in the case of a young lady at Stockholm, on whom Hoffman, a distinguished surgeon, carried into execution the decision of a consultation, comprehending the whole Medical Society of that city, which had been assembled, in 1695, to consider the case, by placing the tongue upon a spatula, slicing off the protruding part by means of a chisel, and suppressing the hemorrhage by red-hot irons. This rather rude procedure proved successful; but, according to Lassus was quite unwarrantable, since the object might have been equally well obtained by using gentler

means, in accordance with his view of the pathological condition—which being that the enlargement was merely an engorgement dependent upon displacement of the tongue, obviously suggested compression of the organ, so as to induce its return into the mouth, and retain it there until all tendency to protrusion had ceased. He found that, in infants, the object thus held in view could be easily accomplished through means of a bandage applied so as to prevent protrusion, while the patient was fed by a spoon, and taken from the breast, which increased the evil by the action of sucking. In cases where the disease had been allowed to become more confirmed, by being permitted to continue for a series of years, he considered it necessary to assist the process of disgorgement by applying leeches and lotions calculated to promote contraction of the distended organ. But on no occasion did he think it requisite or justifiable to remove any portion of the tongue.

The more recent records of surgery contain little additional information with regard to the

nature and symptoms of this disease, and, in so far as its treatment is concerned, tend rather to perplex the subject by the diversity of practice which has been followed. For my own part, I have met with only three cases of this kind ; but, as they have proved very instructive, and led me to entertain definite ideas as to the mode of treatment, I think it may be useful to relate them, together with the practical views which they have suggested. The first was that of a girl twelve years of age, who was recommended to my care by Dr. David Arrott of Arbroath. The prolapsus had existed from the time of birth, and attained so large a size, that its remedy seemed impracticable without removal of the redundant portion. I therefore performed the operation by means of a Λ shaped incision, tied the bleeding vessels, and united the cut edges by sutures. The wound healed without any bad consequences ; but, to my great surprise, in the course of a short time, the tongue had resumed, to the full extent, its bulk and form, so as apparently to be in no respect different from what it had been pre-

remarkable alteration, that rendered her countenance, not ill-favoured in other respects, extremely peculiar and repulsive. This deformity was an expansion of the extremity into a globular shape, as here very exactly represented, not depending upon enlargement of the skin merely, as happens not unfrequently in the male sex at an advanced period of life, but being a morbid development of all the tissues, so that even the columna was longer than usual.

In the ordinary case of integumental hypertrophy, it is well known that the tumours, no matter how numerous or enormous, may be removed without any inconvenience, since they only require to be shaved off, without taking away the skin through its whole thickness, so that the cutaneous surface which remains, cicatrizes with nearly the same facility and rapidity as the one caused by a blister. I have therefore not scrupled to perform operations of this kind even at or beyond the age of eighty, where the growth had become so large as to render existence very uncomfortable, by exciting the ridicule and disgust of

a globular form and brownish colour, with irregular elevations on the surface, and a painful ulcer at one part from the irritation of the teeth.

A strong solution of sulphate of copper—øj. to 3j.—having been applied on lint, the tongue was compressed by a bandage; and the following measurements, which were carefully taken by my house-surgeon, Dr. Marshall, will shew the progress of diminution:—

MEASUREMENTS.

March 7th, circumference 8 inches, length $2\frac{1}{2}$ inches.

„ 8th,	„	7	„	„	$2\frac{1}{4}$	„
„ 9th,	„	$6\frac{1}{2}$	„	„	$2\frac{1}{4}$	„
„ 10th,	„	$5\frac{3}{4}$	„	„	$2\frac{1}{4}$	„
„ 11th,	„	$5\frac{1}{4}$	„	„	$2\frac{1}{4}$	„
„ 12th,	„	5	„	„	2	„
„ 13th,	„	$4\frac{3}{4}$	„	„	$1\frac{3}{4}$	„
„ 14th,	„	$4\frac{5}{8}$	„	„	$1\frac{3}{4}$	„
„ 15th,	„	$4\frac{1}{2}$	„	„	$1\frac{3}{4}$	„
„ 16th,	„	$4\frac{1}{4}$	„	„	$1\frac{3}{4}$	„
„ 17th,	„	4	„	„	$1\frac{3}{4}$	„

March 22.—Bandage and lotion continued. Tongue now projects one inch only from the incisors, but the circumference remains the same.

April 1.—Projection reduced to half an inch ; circumference the same. Is able, with an effort, to close his lips over the tongue.

On the 14th of April, as no further change had taken place, and as the tongue could not be retained within the mouth except by a voluntary effort of the lips, from the lower jaw being so much altered in form as to prevent the teeth meeting sufficiently to do so, I removed the small redundant portion by means of curved scissors applied transversely. Two vessels having been tied, the edges of the wound were stitched together. No bad consequence followed, and the patient was dismissed cured on the 18th of May.

In reply to a letter, requesting Dr. Malcom to acquaint me with the patient's subsequent progress, I received the following account :—

Perth, 14th January 1857.

MY DEAR SIR—Shortly after the receipt of your letter, I visited, at Forteviot, the boy Monteath, upon whom you operated for enlarged tongue. He has grown to be a fine tall young

man, and is working with his father in a quarry, where he was employed when I called for him. He speaks and reads very distinctly, only with a lisp, but not more than hundreds of people in the world. I examined his mouth, and especially the lower jaw: the teeth meet to the first grinders, and then are separated. I told him that it was at your request I examined him; and he said that he finds that his front teeth are gradually approximating, and that the upper and lower jaws are much nearer each other. When I first saw him, and before your operation, he had a constant flow of saliva from his mouth: there is nothing of the kind now; he eats and drinks with perfect ease. Some relations of his, from a distance, came to visit his parents at the holidays, and, upon seeing him, did not know him.

As the lower jaw is so much disposed to approximate the upper jaw, I recommended him to persevere and wear an apparatus on the chin from the top of the head, which, by constant pressure, would assist this effort of nature in completely restoring the symmetry of the face, now

that the cause of deformity is removed. It is only by the front face that you can see that there is any peculiarity in his appearance; his profile is perfect.--Yours very sincerely,

WM. MALCOM.

From what has been said, I think it will appear that Lassus was right in regarding compression as the most expedient means of correcting prolapsus linguæ; and that even when, from the long duration of the disease, with consequent difficulty of replacement from alteration in the form of the jaw, it may be found requisite to curtail the organ, this should not be done until the tongue has, so far as possible, been reduced to its natural size. The incision will thus be limited to the smallest extent, and the texture concerned will be in the most favourable condition for healing.

CASE III.

C. D., 7 years of age, from Perthshire, was admitted on the 4th of March 1859, on account

of Prolapsus Linguae, from which he had suffered four years. The tongue protruded in a globular form, and of a brown colour to the extent of more than two inches. The teeth of both jaws, but particularly the lower one, were pushed forward out of their proper place, and there was a constant discharge of saliva productive of great discomfort.

Pressure was applied as in the last case, and with such effect that a daily diminution could be noticed until the end of a fortnight, when the swelling became stationary. On the 4th of April, therefore, I removed the still redundant portion by means of scissors, and soon afterwards the recovery might be regarded as complete, but for the alteration in form, which the lower jaw had experienced from pressure by the enlarged tongue. This was so great that the front teeth were more than an inch apart. In course of time, however, this defect gradually disappeared, and I heard about a year afterwards that the boy had got quite well. He was dismissed on the 8th of May.

LITHOTOMY.

CASES WITHIN THE LAST SESSIONAL PERIOD OF NINE MONTHS.

Name.	Age.	Date	Weight of Stone or Stones.	Result.
1. J. C.	6	Jan. 13	3vi	Cured
2. H. A.	67	Feb. 13	3ij. 3iii.	Cured
3. R. M.	65	May 4	3vj. 3ij.	Cured
4. P. D.	22	June 21	3j. 3v.	Cured
5. J. R.	34	July 12	3ij. 3i.	Cured
6. J. D.	3	July 30	3ss.	Cured

I mention these cases merely as a text for the expression of my opinion that of all the methods which have hitherto been devised for the removal of stones from the bladder by incision, the lateral operation, as performed by Cheselden, is the best, and that the various proposals which have been suggested for its improvement are so many steps in a wrong direction. It is indeed too much the custom of young operators, when they meet with unfortunate cases, to account for their failures by attributing them to some fault of the method pursued; and there can be no doubt that in the

modern teaching of surgery there is more attention paid to the mode than to the principle of performance. The fiddle-faddle instructions that emanate from some schools of the present day, not only for using but even for holding a knife, sufficiently denote the poverty of intellect whence they proceed, and the lowness of aspiration to which they are addressed. All intelligent students should regard such trivialities as beacons to warn them against a system of instruction that can tend only to cramp the faculties and impede the attainment of excellence.

Instead, then, of studying the endless appliances which have been suggested for supplementing or replacing the simple knife, staff, and forceps, or the various directions in which it has been proposed to make the prostatic incision, it will be useful for any one who desires to remove urinary concretions with safety, to consider what is really requisite for success. In the first place there must be an ample aperture in the integuments, for access to the deeper parts, and allowing the urine to escape ; secondly, a free division of

the perineal muscles, to prevent their subjecting the bladder to injurious pressure, by squeezing it between them and the forceps when the stone is drawn down ; and thirdly, a section of the prostate fairly through the tough resisting band at its base, which cannot be torn without the certainty of causing fatal consequences. Mr. Liston propagated a most deadly doctrine when, in regard to the prostate, he taught, that “ the less cut the greater the patient’s safety,” since even he was at length brought to admit, that there is a part at the base of the gland “ which effectually prevents dilatation or enlargement of the orifice of the bladder beyond a certain and very limited extent, without laceration, dreadful suffering, and imminent danger.” But even after the prostate has been divided thus far, it not unfrequently proves so tough and unyielding as to require one or more applications of the knife—the surgeon constantly endeavouring to obtain the requisite space by dilatation, but never using such a degree of force for this purpose as experience has proved to be dangerous. “ If I find the stone very

large," says Cheselden, " I cut upon it again as it is held in the forceps." And so every prudent surgeon should do, instead of overcoming the resistance by a mere exercise of strength.

When the lithotriptic process seemed to approach perfection, it was supposed by many people that there would soon be no further occasion for lithotomy, from the care with which patients might be expected to apply for relief at an early period of their complaint, while the concretion was still within reach of crushing; but the time which has since then elapsed affords sufficient proof that such expectations were altogether illusory, as the recognition of stones, in regard to their size, is still very much the same as it was in former days; while repeated attempts to break them, and comminute the fragments, are beset with the most serious danger of inducing a far more distressing condition than the one under treatment. This is the chronic inflammation, or what has been called catarrh of the bladder, which, instead of subjecting the patient to occasional pain or inconvenience, racks him day and night

with constant torture, and admits of relief only from death, not until the end, it may be, of several miserable years. If I were to relate some of the cases which have fallen under my observation, of patients who perished in this way, after being supposed to have been treated with success by the most eminent stone breakers, the lithotrite would be regarded with more dread than the knife.

Not long ago a gentleman resident in Gibraltar, after suffering long and severely from stone in the bladder, repaired to Paris for the purpose of getting it crushed. He there placed himself under the care of one, and then of another most celebrated operator, but without accomplishing his object, so that, after remaining several months in the French capital, he returned home in a worse state than when he left it. Next year, finding the complaint intolerable, he again set out in quest of relief; but this time directed his course towards Edinburgh, and desired me to perform the cutting operation. I accordingly did so, and removed two stones, weighing together

four ounces, without any pain or subsequent trouble, so that he was soon able to take his departure with every prospect of complete and permanent relief.

But when the stones were subjected to a section, they told their history no less distinctly than unfavourably for the lithotriptic process, since they consisted of two portions—one brown, and obviously composed of lithates, which had



been the original formation, the other of that white and phosphatic sort which denotes the existence of

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long continued catarrhal irritation of the bladder, doubtless caused by the efforts to break the stone in Paris, which fortunately proved abortive, as the fragments could hardly have been removed without still more mischief.

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J. F., aged 21, a stout young woman from the country, recommended to my care by Dr. Howden of Haddington, was admitted into the hospital on the 17th of November last, for the removal of a hair-pin, which had been introduced into the bladder. It was said to be of the double kind, about two inches long, with two points at one end, and a loop at the other, and could be readily felt on examination by sounding; so that the only difficulty attending extraction appeared to proceed from the risk of seizing the wrong extremity, especially as from being retained several weeks it might be expected to have acquired some degree of phosphatic incrustation, which

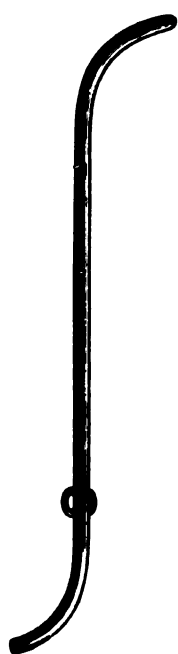
would make its recognition by the touch of an instrument uncertain.

On the 22d the patient being rendered unconscious by chloroform, I dilated the urethra by introducing a succession of bougies gradually increased in size, until the point of my finger was admitted into the neck of the bladder, where, feeling the tense resisting fibres situated there, I made a very slight incision hardly more extensive than the blade of a narrow straight bistoury employed for this purpose. The finger then readily entered the bladder, and ascertained the position of the pin, into the loop of which a hook was passed, so as to effect the extraction easily and safely. The patient suffered no inconvenience, and in the course of a few days, having regained completely the power of retention, was dismissed.

The point of most interest in this case is the illustration it affords of the advantage which attends a combination of dilatation and cutting for obtaining access to the bladder. Both of these means, when employed separately, are apt

little concern, having always found them to pass away in the course of a few hours without leaving any trace of their existence. At length a fatal case opened my eyes to the truth, and shewed that no patient could be considered safe so long as he was exposed to such an attack.

I then tried various means of counteraction,



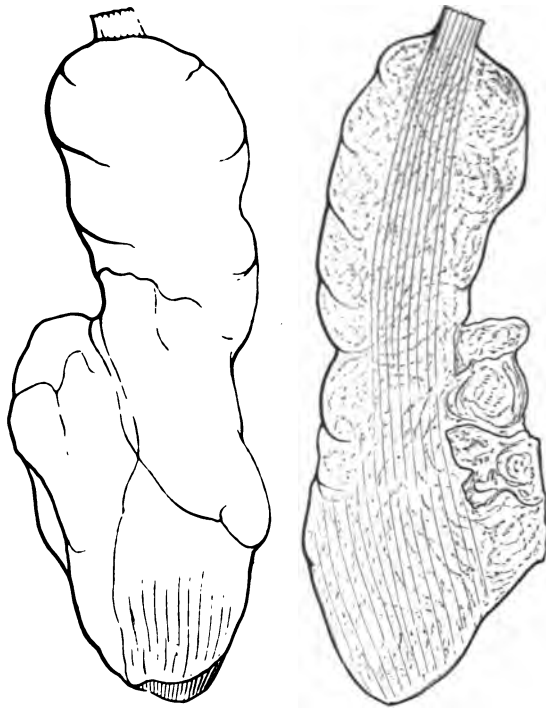
by dividing the urethra more freely, so as to prevent its premature closure, by keeping the catheter a longer time in the bladder, by inserting the finger from time to time, so as to separate the edges of the urethra, and lastly by introducing a tube through the wound of the perineum, which I believe has completely accomplished the object in view. It is about nine inches long, and of this form. It is easily introduced, and may be retained with perfect security, while exposing the

coats of the bladder to no risk of the injurious pressure that attends the use of an ordinary cathe-

under the fascia on the front or palmar side, and extended from near the wrist two-thirds of the distance towards the elbow. The form was elongated and irregularly nodulated, the substance moderately firm and elastic, and the mobility slight, only in a lateral or transverse direction. From these circumstances I concluded that the tumour involved the median nerve; and under this impression proceeded to remove it.

Having made a free incision through the integuments, I opened the fascia, and found the tumour at its lower part, presenting a dark-coloured, mottled, and shining surface, quite unconnected with the neighbouring parts, and having a cord protruding from its extremity. This I divided, supposing it to be the nerve, and expecting to find a similar condition at the other end; but here there was no such distinct definition of the growth, or any cord perceptible, so that some dissection was required to finish the operation. The tumour, which was about six inches in length, having been thus removed quite entire, was found to possess the form here delineated on a reduced

scale, and when divided longitudinally very unexpectedly displayed a tendon instead of the nerve, which had been supposed the seat of its

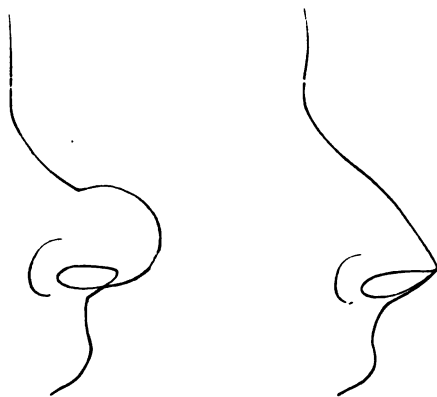


formation. The surface of this section displayed the usual appearance of a cerebriform growth, and the microscope denoted corresponding characters.

The operation was performed on the 31st of January last. The patient made a good though rather slow recovery, was dismissed on the 25th of March, and soon afterwards resumed her duties as housemaid, which she still continues to exercise without any sign of relapse.

MORBID EXPANSION OF THE NOSE.

E. M., aged 18, came from the country on the 26th of April, complaining of her nose, which,



although originally not different from that of other people, had four or five years ago undergone a

calling at his hotel, was rather surprised to hear that he had gone upon an excursion to Melrose. But my astonishment was considerably greater next day when he walked into my room, and cordially shaking hands, exclaimed, "Well, you have made a cure of me." In reply, I rather anxiously inquired, "What sort of a stream could he make?" "It would turn a mill," was the ready rejoinder. Somewhat encouraged, I then asked to see the field of my operation, and found all the parts concerned in the most perfect state of integrity.

It must be admitted, however, that such cases are exceptional, and that in general the stricture will return sooner or later unless the canal be kept dilated by the occasional introduction of bougies or catheters. But here a difficulty is presented by the comparative rarity of skilful manipulation in the use of urethral instruments, of which the imperfection in most surgical armouries shews how little attention is apt to be bestowed on their employment. Thus a gentleman who had been under my care, lately writing at a distance of little more than twenty miles from London, says

those who witnessed it. But the condition of this young woman did not admit of remedy on such a principle, and at first sight seemed an improper subject for interference.

The patient's urgency having led me to reconsider the subject, I resolved to try the effect of removing a wedge-shaped portion of the prominence, and did so on the 6th of May, by means of two decided longitudinal incisions, embracing the projection, passing through the cartilages, and meeting at some distance down the septum. The edges of the wound were brought together by silver sutures, and united so that they left no trace of their existence, the nose not only being rendered very shapely, but allowing the other features to present their naturally pleasing aspect.

THE REMEDY OF STRICTURES BY EXTERNAL INCISION.

A. L., 52 years of age, from Dundee, was admitted into the hospital on the 29th of October last, suffering from the effects of a stricture in his urethra. It had existed five or six years, and become progressively more troublesome, until it rendered micturition extremely painful, and prevented the introduction of instruments. At length the scrotum and perineum swelling, with much induration, it was thought proper to send the patient here. On his way the enlargement greatly increased, so as to extend above the pubes, and when he arrived no time was lost in making incisions for the escape of urine, which was evidently extravasated. These openings being free, and in the middle line, allowed the fluid such ready egress as prevented the sloughing that would otherwise have been occasioned, and the swelling speedily subsided.

I then proceeded to remedy the stricture, and

soon succeeded in passing bougies through the contracted part of the canal, which was immediately behind or below the scrotum, and carried on the dilatation until instruments of the full size could be introduced. Under this treatment all the wounds healed, except one in the scrotum, which was surrounded by very indurated texture, and allowed more than a half of the water to escape. After contending in vain against this obstacle to recovery for several weeks, I tried the effect of keeping a catheter in the bladder, but without any advantage, and should then have felt much at a loss if limited to the means that were in use before I adopted the method of external incision.

On the 10th of January a grooved director having been passed through the stricture, I cut freely through the thickened and condensed textures, and then ran the knife fairly through the whole extent of contracted urethra. Through the wound thus made a short catheter was introduced into the bladder and retained for a week. Everything went on favourably: the urine passed in a full

stream, the fistulous opening closed, and the patient was dismissed cured on the 2d of February.

CASE II.

A gentleman nearly 60 years of age, recommended to my care by Dr. Madstone Smith of Exmouth, came here last spring suffering from a stricture of the urethra, which had existed for more than twenty-five years, and although treated by surgeons of skill and experience, had been long regarded as truly impermeable. I found a fistula in perineo, with great induration extending to the verge of the anus; but on the second day after the patient's arrival succeeded in passing a metallic bougie fairly into the bladder without any pain or a drop of blood. The dilatation was then carried on by successive steps and with intervals of sufficient length for preventing any undue irritation; but all to no purpose, since the water still dribbled from the orifice of the urethra, and escaped in nearly an equal quantity by the fistulous opening, while the patient was distressed by frequent calls to empty the bladder,

and continued to have a profuse discharge of mucus. The general health also did not improve, and, on the contrary, seemed to be giving way even more than it had done previously from the long continued annoyance.

At length, after two months had been thus worse than wasted, I divided the stricture by external incision. The patient was at once relieved from all his sufferings; and by the end of three weeks went to London, where I saw him afterwards in the enjoyment of perfect health. From not using bougies, there has since then, I understand, been some return of the symptoms, as was to be expected.

Other cases of a similar kind that have occurred, both in public and private practice, within the same period, might be mentioned, to illustrate still farther two practical facts which I have long been anxious to inculcate. These are that in some cases stricture of the urethra will not yield to dilatation, or rather continues to present its symptoms after being dilated; and that in such circumstances a free division of

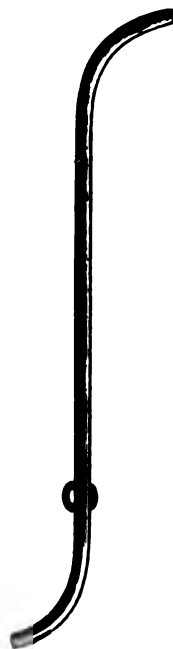
the contracted part by external incision affords effectual relief. Having, in common with all my professional brethren who have been much engaged in this department of surgery, frequently experienced the vexatious opposition of the disease in such a form, I felt great pleasure in communicating an easy method of overcoming the difficulty, and certainly was not prepared for the storm of abuse and misrepresentation which it brought down upon me. Nearly £800 of law expenses, incurred not for prosecuting the libellous attacks that were freely circulated, but in simply defending myself from the persevering litigation of obscure individuals, whose only ground of complaint was that I declined entering into discussion with them, as being beyond the pale of professional respect and courtesy, was one of the fruits derived from my proposal, and may not be unworthy of mention as a curious fact, shewing the danger which sometimes attends the introduction of improvements.

In originally proposing the external incision for remedying strictures indomitable by the ordi-

nary means of treatment, I believed that the only sources of danger which could result from this procedure were hemorrhage and infiltration of urine, and that both of these consequences might with certainty be prevented. In the latter of these opinions I have been confirmed by a very large experience, in the course of which I never lost a patient from the loss of blood or urinary infiltration. But although so far correct in my anticipations, I was very unexpectedly led to recognise another source of danger, which could not possibly have been anticipated : this is, constitutional disturbance, proportioned in degree to the patient's excitability, and induced by the irritation of urine breaking through a recently established union between the cut edges of the urethra. The ordinary symptoms of this effect are rigors, vomiting and quick pulse, but in their more severe form may be attended with delirium, suppression of urine, and sinking. For a long while, and indeed not until I had operated upon between seventy and eighty cases, I regarded these occasional consequences of the operations with very

little concern, having always found them to pass away in the course of a few hours without leaving any trace of their existence. At length a fatal case opened my eyes to the truth, and shewed that no patient could be considered safe so long as he was exposed to such an attack.

I then tried various means of counteraction,



by dividing the urethra more freely, so as to prevent its premature closure, by keeping the catheter a longer time in the bladder, by inserting the finger from time to time, so as to separate the edges of the urethra, and lastly by introducing a tube through the wound of the perineum, which I believe has completely accomplished the object in view. It is about nine inches long, and of this form. It is easily introduced, and may be retained with perfect security, while exposing the coats of the bladder to no risk of the injurious pressure that attends the use of an ordinary cathe-

ter, and effectually prevents the cut edges of the urethra from uniting, so as to incur the risk of being separated by the stream of urine, and thus give rise to the serious consequences of this event.

It may be remarked that, in operating upon strictures anterior to the scrotum, I never introduce a catheter, as it seems to be quite unnecessary, and therefore a useless complication.

There is another point in regard to which my opinion has been considerably modified by experience: this is, the extent to which division of a stricture may supersede the subsequent use of bougies. Originally I expected that the operation would not only afford complete relief from the existing symptoms, but also extinguish the tendency to contraction, so as to render any future treatment unnecessary; and that such may be the result has been fully ascertained. Thus in the very first case of division behind the scrotum, where the patient had suffered for more than twenty years, and been reduced to the most extreme distress, being unable either to evacuate or retain the urine, and rendered so wretched as in all sincerity

to pray for the termination of his existence, although during twelve months I had laboured in vain to afford relief by dilatation, temporary or permanent, internal incisions, and various combinations of these means—the operation at once restored health and comfort, which have continued without the introduction of instruments. Very nearly twenty years have now elapsed since this salutary change was accomplished, and since then I believe few have more enjoyed life, or do so now, than the well known and much respected individual who was the subject of it.

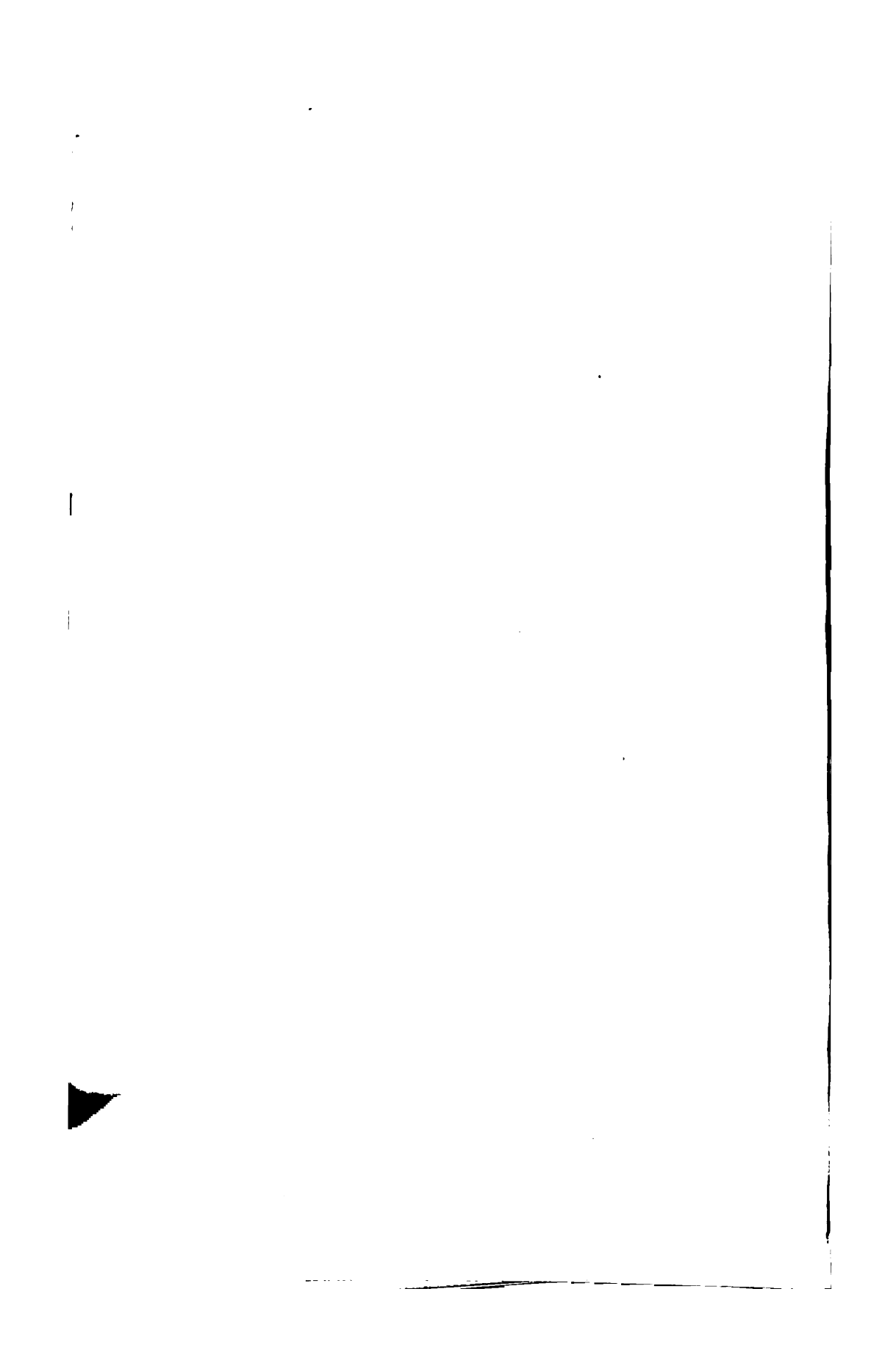
A more recent instance of the same kind which may be mentioned, is that of a gentleman from the neighbourhood of Gloucester, who about two years ago was placed under my care by the medical friend who accompanied him. I found a man of naturally strong and energetic system, reduced by suffering to a state of extreme weakness, irritability, and despondency, with great enlargement of the scrotum and perineum, through which the urine passed by fistulous canals, having

nearly deserted its proper channel. The patient would not allow me even to examine him except under chloroform ; and as in such a case dilatation was quite out of the question, I at once divided the contracted part of the urethra, and introduced the perineal tube. When it was withdrawn at the end of three days, improvement quickly proceeded, and was completed in little more than three weeks, so that the patient then returned home quite a new man ; and promising to let the full sized bougie, which I passed with perfect ease, be introduced occasionally for the prevention of relapse. From the letters of more than one practitioner, I was sorry to hear that this precaution had been neglected, and that the morbid condition was no less distressing than it had been before coming under my care. Not many weeks ago I received a letter of this kind so gloomy, that, in replying to it, I recommended the operation to be repeated with greater subsequent perseverance in the use of instruments. A few days ago, finding the card of this gentleman, I concluded that he had come again for my assistance, and upon

calling at his hotel, was rather surprised to hear that he had gone upon an excursion to Melrose. But my astonishment was considerably greater next day when he walked into my room, and cordially shaking hands, exclaimed, "Well, you have made a cure of me." In reply, I rather anxiously inquired, "What sort of a stream could he make?" "It would turn a mill," was the ready rejoinder. Somewhat encouraged, I then asked to see the field of my operation, and found all the parts concerned in the most perfect state of integrity.

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of three practitioners in his neighbourhood, "One has an old bougie made A.D. 1700 ; another, two or three old-fashioned catheters ; and the third, some gum elastic catheters totally unfitted for the purpose." Such being the case, I think prudence requires that every patient who has had a stricture divided should learn to introduce bougies : since by doing so at intervals of a week or fortnight he will be perfectly secure from future trouble.



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